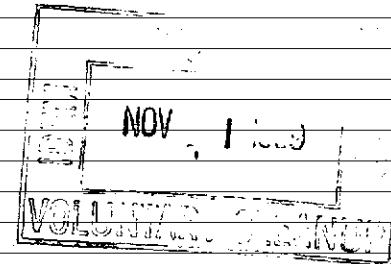


**TIER II CRITERIA COMPARISON  
VOLUNTARY SITE INVESTIGATION  
ALLIEDSIGNAL INDUSTRIAL COMPLEX  
SOUTH BEND, INDIANA**

**PREPARED FOR:**



**PROJECT NUMBER 9822-13**

**OCTOBER 1999**

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**TIER II CRITERIA COMPARISON**

**VOLUNTARY SITE INVESTIGATION  
ALLIEDSIGNAL INDUSTRIAL COMPLEX  
SOUTH BEND, INDIANA**

**IDEM SITE NO. 6980601**

***PREPARED FOR:***

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**PROJECT NUMBER 9822-13**

**OCTOBER 1999**

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## **EXECUTIVE SUMMARY**

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### **EXECUTIVE SUMMARY**

In 1995, AlliedSignal, Inc. (AlliedSignal) began a comprehensive site-wide Voluntary Site Investigation (VSI) to characterize the nature and extent of soil and groundwater impacts resulting from historical manufacturing operations. The VSI incorporated historical environmental investigations and remedial actions that had conducted proactively and voluntarily since 1978. In January of 1999, after completing the VSI, AlliedSignal and the Indiana Department of Environmental Management (IDEM) entered into a Voluntary Agreement under Indiana's Voluntary Remediation Program (VRP). The agreement formalized the regulatory framework under which future environmental actions at the site would be addressed. As one of the first step in the VRP process, this report presents a comparison of soil and groundwater analytical data collected during the VSI to the IDEM Tier II Cleanup Goals published for the VRP.

Based upon the comparison to the Tier II Cleanup Goals, the following Areas of Concern (AOCs) had constituents *in unsaturated soil* at concentrations that exceed the Tier II Cleanup Goals:

- ***Area 3/11 - Former Disposal Area/Carbon Brake Expansion*** (VOCs, PCBs and TPH in soil exceed the cleanup goals)
- ***Area 4/16 - Former I-Beam Building*** (TPH in soil exceeds the cleanup goal)
- ***Area 5, Plant 6/16 - Former USTs*** (VOCs and TPH in soil exceed the cleanup goal)
- ***Area 8 - Former I-Beam Building Stormwater Drainage System*** (TPH in soil adjacent to one dry well exceeds the cleanup goal)
- ***Area 13, Plant 10 - Former Electroplating Operations*** (lead in soil exceeds the cleanup goal)
- ***Area 14, Plant 1 - Former Painting and Degreasing Operations*** (TCE in soil at one area, and lead and cadmium in soils at a second area exceed the cleanup goals)
- ***Area 15 - Former Metal Stamping Operations*** (TCE in one soil sample and TPH in one soil sample exceed the cleanup goals)

## **EXECUTIVE SUMMARY**

For on-site groundwater in the shallow flow system, VOCs exceed the Tier II Cleanup Goals, primarily at sampling locations near soil source areas. Also, cyanide in one Geoprobe groundwater sample collected at the Plant 10 Electroplating Area exceeds the Tier II Cleanup Goal. Metals and phenols are below the Tier II Cleanup Goal. For on-site groundwater in the deep flow system, VOCs are below the Tier II Cleanup Goals, excluding vinyl chloride at well D4. Phenols, metals, and cyanide are below the Tier II Cleanup Goals.

For off-site groundwater in the shallow flow system, TCE in groundwater at wells S21, S23, S24, and S27 exceed the Tier II Cleanup Goals, as well as cis-1,2-DCE at S24 and 1,2-DCA at S9. Phenols, metals, and cyanide are below the Tier II Cleanup Goals. For off-site groundwater in the deep flow system, VOCs, phenols, metals, and cyanide are all below the Tier II Cleanup Goals.

### **1. INTRODUCTION**

Since 1978, the AlliedSignal, Inc. (AlliedSignal) Industrial Complex in South Bend, Indiana (IDEM Site No. 6980601), has been proactively conducting environmental investigations and remedial actions, all performed on a voluntary basis. In 1995, AlliedSignal began a comprehensive site-wide Voluntary Site Investigation (VSI) to characterize the nature and extent of soil and groundwater impacts resulting from historical manufacturing operations (ABB, 1998). In January of 1999, AlliedSignal and the Indiana Department of Environmental Management (IDEM) entered into a Voluntary Remediation Agreement under Indiana's Voluntary Remediation Program (VRP).

The VRP establishes the terms and conditions for preparing and implementing a Remediation Work Plan. As one of the first step in the Remediation Work Plan process, this report presents a comparison of soil and groundwater analytical data collected during the VSI to the IDEM Tier II Cleanup Goals (IDEM, 1996).

The criteria comparison is organized as follows:

- Section 2 – Site Background
- Section 3 – Cleanup Criteria Selection
- Section 4 – Results and Discussion

## **SECTION 2**

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### **2. SITE BACKGROUND**

This section provides background information on a site as necessary to support the criteria comparison.

A detailed discussion of the site's manufacturing processes, previous environmental activities, hydrogeologic setting, and the nature and extent of constituents in soil and groundwater is presented in the VSI.

#### **2.1 SITE LOCATION AND DESCRIPTION**

The AlliedSignal Industrial Complex is located at 717 North Bendix Drive, South Bend, Indiana (Figure 1). The facility includes 26 primary buildings on 110 acres. The properties around the Complex include mixed residential, commercial and industrial areas.

Throughout its history, the AlliedSignal Industrial Complex has focused on manufacturing automotive and aircraft components. Manufacturing processes at the facility which are of potential environmental importance include metal stamping, grinding, drilling and machining; metal cleaning and degreasing; heat treating; electroplating; coating and painting; and raw material and waste storage. Through the years, the fundamental manufacturing processes have remained unchanged, although products have been manufactured at different locations throughout the Complex.

#### **2.2 PREVIOUS ENVIRONMENTAL ACTIONS**

In 1995, AlliedSignal began a comprehensive site-wide VSI (ABB, April 1998). Upon initiation of the VSI, AlliedSignal completed a preliminary site assessment of the Complex. This involved a review of all site investigations and remedial actions conducted to date, an evaluation of current and historical groundwater monitoring data, a review of AlliedSignal's files and records, and a study of past and present manufacturing operations. As a result of the assessment, 19 AOCs were identified for investigation. Area 1 focuses on groundwater at the Complex. Areas 2 through 19 are locations where current or historical manufacturing operations, or materials handling, could have potentially impacted soil or groundwater.

The VSI involved characterization of the nature and extent of soil and groundwater impacts at the 19 areas. Investigative techniques included hand-augering, Geoprobe soil and groundwater sampling, passive soil gas sampling, cone penetrometer testing, monitoring well installation and groundwater

## **SECTION 2**

sampling. As part of the VSI, a Human Health Risk Evaluation and Baseline Ecological Assessment was performed to assess whether soil or groundwater at the facility pose unacceptable health risks under current and foreseeable future land-use conditions.

The following conclusions were made based upon the VSI:

- Confirmed no current unacceptable risks to plant workers and off-site downgradient drinking water wells.
- Identified no unacceptable ecological risks.
- Confirmed effective recovery of a free product plume.
- Determined that volatile organic compounds (VOCs) are the primary constituents of concern in soil and groundwater.
- Identified an area of soils south of the Carbon Brake Building that contained polychlorinated biphenyls (PCBs);
- Demonstrated that dissolved metals are not a significant concern in groundwater.
- Confirmed the presence of an intermediate clay unit between upper and lower sand and gravel groundwater-bearing zones (termed the Shallow and Deep Flow Systems).
- Demonstrated no off-site migration of VOC-impacted groundwater on the west side of the site.
- Identified five soil source areas that may pose future potential risks.

## **SECTION 2**

### **2.3 SITE CLOSURE STRATEGY**

The overall goal of the remedial action is to protect against unacceptable risk to human health, safety, public welfare, and the environment. The following objectives have been established to met this goal:

- Continue containment of impacted groundwater to minimize potential future off-site migration of chemicals in groundwater.
- Remove the remaining areas of free product where practical and technically feasible.
- Address soil source areas where constituent concentrations pose unacceptable risks for industrial site use, potential future construction or excavation worker exposure, and off-site residential use of groundwater.

Exposure prevention remedies at this site will include a land-use restriction, an activity restriction, and an engineering control. First, an industrial land-use restriction will be recorded on the property deed.

Second, if necessary, an Environmental Notice prohibiting the use of groundwater on-site and on those properties between the downgradient property boundary and a point of compliance will be record on the appropriate property deeds. Alternatively, a groundwater use restriction may be accomplished through an existing St. Joseph County Well Drilling and Water Supply Ordinance. Third, a Soil Management Plan will be recorded on the facility's property deed requiring that pavement or capped areas remain in-place and be properly maintained unless a Soil Management Plan is followed. The plan will establish policies and procedures to protect health, safety, and environmental exposure during excavation projects, and to ensure that any excavated soils are properly managed and disposed.

Too weak  
thus restrictive  
Covered to  
them (via T. Baker)

T. Baker

*Region XI  
Prog's*

### **3. CLEANUP CRITERIA SELECTION**

This section describes the cleanup criteria that have been established for the Tier II comparison. Cleanup criteria for sites under the Indiana VRP (IDEM, 1996) are a combination of performance standards and quantitative standards. The appropriate performance standards and the site's ability to meet these standards will be presented in the Remediation Work Plan. This document focuses on a comparison to the quantitative standards.

Table 3-1 presents the Tier II Cleanup Goals for soil and groundwater at the site. The Tier II Cleanup Goals provide a criteria for initial comparison of analytical data to assess whether further action is warranted at a particular AOC. Further action could involve development of a site-specific Tier III criteria, implementation of an activity-restriction or engineering control, or, if appropriate, remediation.

Cleanup goals were not published for several of the compounds of concern at this site. Prior to conducting the comparison, HLA calculated these cleanup goals using the algorithms, exposure durations, exposure frequencies, and chemical properties published in the 1996 VRP Resource Guide.

The calculations are provided in Appendix A and the results incorporated into Table 3-1.

The Tier II Cleanup Goals were selected as follows:

#### ***Off-Site Groundwater Criteria***

The off-site groundwater criteria are the 1996 VRP Tier II Cleanup Goals for the residential scenario (i.e., groundwater ingestion and inhalation of volatiles in a residential setting). As discussed in Section 2.3, the closure strategy for the site may involve establishing a compliance point at the downgradient boundary of the plume and restricting groundwater use within the plume. The off-site groundwater criteria would be then applied at the compliance point. For purposes of this initial comparison, off-site groundwater is defined as "groundwater downgradient of the property line". The results of the comparison can then be used to assess whether a compliance point should be established beyond the property line.

#### ***On-Site Groundwater Criteria***

The on-site groundwater criteria are the 1996 VRP Tier II Cleanup Goals for the nonresidential scenario (i.e., groundwater ingestion in the industrial scenario). The on-site groundwater criteria are applied to

## **SECTION 3**

groundwater upgradient of the compliance point (i.e., groundwater upgradient of the property line for this initial comparison).

As discussed in Section 2.3, the closure strategy for the site will involve restricting on-site groundwater use. As a result, the actual site-specific criteria (i.e., the Tier III criteria) for site closure may be concentrations that are protective of groundwater at a downgradient compliance point and vapor migration to indoor air. Based upon modeling conducted during the VSI, the criteria develop considering a downgradient compliance point and vapor migration will be higher than the non-residential Tier II Cleanup Goals. Considering this, the nonresidential Tier II Cleanup Goals provide a conservative screening of the analytical data to identify areas warranting further evaluation.

### ***On-Site Soils Criteria***

On-site soil criteria are the 1996 VRP Tier II Cleanup Goals for the nonresidential scenario (i.e., construction or excavation worker incidental ingestion and inhalation of volatiles and fugitive dusts). The closure strategy for the site may involve using a Tier III modeling approach to determine soil concentrations protective of groundwater at the off-site compliance point. Based upon modeling conducted during the VSI, soil criteria developed to be protective of off-site groundwater compliance are higher than the non-residential Tier II Cleanup Goals<sup>1</sup>. Considering this, the nonresidential Tier II Cleanup Goals provide a conservative screening of the analytical data to identify areas warranting further consideration.

### ***TPH Soil Criteria***

The criterion for total petroleum hydrocarbons (TPH) in soils where jet fuel is of concern is the risk-based cleanup goal of 6,000 mg/kg calculated by HLA (see Appendix B). For areas where lube oils are of concern, the TPH criterion is the 1996 VRP maximum upper limit for total semivolatile compounds of 10,000 mg/kg. Based upon experience at other industrial sites, a risk-based TPH criteria for lube oil would exceed the IDEM VRP maximum upper limit; therefore, the maximum upper limit was used. In

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<sup>1</sup> Excluding trichloroethene (TCE) in Plant 1, where modeling suggested a lower cleanup goal to be protective of the off-site, downgradient groundwater compliance point (see Appendix O-2 in the VSI).

## **SECTION 3**

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areas where the type of petroleum released was unknown or is potentially a commingling of both volatile and semi-volatile petroleum compounds, the lower of the two criteria (i.e., 6,000 mg/kg) was used.

At the South Bend Complex, petroleum hydrocarbons of primary concern are Stoddard/naphtha, jet fuels (JP-4, JP-5, and JP-8), and cutting/lubricating oils. Stoddard/naphtha is a petroleum mixture containing hydrocarbons from C<sub>6</sub> to C<sub>12</sub>. The primary compounds of concern in Stoddard/naphtha are: benzene, n-propylbenzene, 1,2,4-trimethylbenzene, naphthalene, and acenaphthalenes. For the VSI, the USEPA Method 8260 VOC analysis was modified to include these constituents. VOC analysis was specified when Stoddard/naphtha was of concern. Considering this, the comparison of the VOC analytical results to the Tier II Cleanup Goals addresses Stoddard/naphtha.

Jet fuels are made by blending naphtha, gasoline, and/or kerosene to meet specific military or commercial specification. Jet fuels have a broader range in hydrocarbons (C<sub>6</sub> to C<sub>12</sub>). Jet fuels contain the compounds described above plus potentially benzene, toluene, ethylbenzene, and xylenes found in gasoline and the heavier-chained C<sub>6</sub> to C<sub>12</sub> hydrocarbons. During the VSI, a VOC analysis was conducted when jet fuels were of concern. As a result, comparison of the VOC analysis to the Tier II Cleanup Goals addresses the volatile fraction of jet fuel.

When jet fuel was of concern, TPH analysis by gas chromatograph was also performed due to the larger hydrocarbon chain range. The TPH analysis covered hydrocarbon chain ranges C<sub>6</sub> to C<sub>12</sub>. The TPH analysis addresses the less volatile fraction of jet fuel (i.e., hydrocarbon chain ranges C<sub>6</sub> to C<sub>12</sub>). Considering this, comparison of the TPH result to the maximum upper limit of 1,000 mg/kg for VOCs is not appropriate (since the criteria is for the volatile fraction). The risk-based criteria presented in Appendix B is appropriate (i.e., a cleanup goal of 6,000 mg/kg).

### ***Saturated Soil Samples***

Of note, some saturated soil samples were collected during the VSI. The analytical results from these saturated soil samples were excluded from the Tier II cleanup goals comparison. These samples were collected to evaluate the vertical extent of impacts to groundwater and whether dense non-aqueous phase liquids (DNAPLs) might be present in the aquifer. The samples are representative of neither soil nor groundwater, and therefore are not directly comparable to either cleanup goal.

### 4. RESULTS AND DISCUSSION

The comparison of analytical results to the Tier II cleanup criteria is provided on the tables in Appendix C. Also, Figures 2 through 24 illustrate sampling locations where soil and/or groundwater exceeded the Tier II Cleanup Goals. Table 4-1 provides a summary of the criteria comparison by AOC. The results are discussed below.

#### 4.1 SOILS

The following AOCs had constituents in soils at concentrations that exceed the Tier II Cleanup Goals:

- ***Area 3/11 - Former Disposal Area/Carbon Brake Expansion*** - VOCs and PCBs in soils exceed the Tier II Cleanup Goals. TPH slightly exceeds the risk-based criteria of 6,000 mg/kg in three samples.
- ***Area 4/16 - Former I-Beam Building***- TPH in soil exceeds the risk-based criteria of 6,000 mg/kg at two locations.
- ***Area 5, Plant 6/16 - Former USTs*** - VOCs in soil exceed the Tier II Cleanup Goal. One soil sample exceeds the risk-based TPH criteria of 6,000 mg/kg.
- ***Area 8 - Former I-Beam Building Stormwater Drainage System*** - TPH in soil exceeds the risk-based criteria of 6,000 mg/kg in soil adjacent to one dry well.
- ***Area 9 - Plant 3/3A, Former Plating and Anodizing Operations*** - VOCs were detected in soils outside the south wall adjacent to Dock 10 at concentrations exceeding the Tier II Cleanup Goals. This area will be incorporated into Area 5 - Plant 6/16, Former USTs.
- ***Area 13, Plant 10 - Former Electroplating Operations*** - Lead in soil exceeds the Tier II Cleanup Goal in one sample (13GP006).
- ***Area 14, Plant 1 - Former Painting and Degreasing Operations*** - TCE exceeds the Tier II Cleanup Goal in one soil sample. Lead and cadmium in soil at the western most Painting/Degreasing Area exceeds the Tier II Cleanup Goals.
- ***Area 15 - Former Metal Stamping Operations*** - TCE exceeds the Tier II Cleanup Goal in one soil sample. TPH in soil exceeds the risk-based criteria of 6,000 mg/kg in one sample.

### 4.2 ON-SITE GROUNDWATER

When evaluating on-site groundwater, consideration must be given for the shallow and deep flow systems. Each flow system is discussed below.

#### *On-Site Groundwater - Shallow Flow System*

In on-site groundwater (i.e., groundwater inside the property boundary), VOCs were detected above the Tier II Cleanup Goals, primarily at sampling locations near soil source areas (see Figure 23). VOCs that exceeded the Tier II Cleanup Goals were: 1,1-DCE, 1,2-DCA, 1,2-DCP, TCE, vinyl chloride, and benzene.

Cyanide was detected in one Geoprobe groundwater sample collected at the Plant 10 Electroplating Area above the Tier II Cleanup Goal. Metals and phenols are below the Tier II Cleanup Goal.

#### *On-Site Groundwater - Deep Flow System*

For on-site groundwater in the deep flow system, VOCs are below the Tier II Cleanup Goals, excluding vinyl chloride at well D4. Phenols, metals, and cyanide are below the Tier II Cleanup Goals.

### 4.3 OFF-SITE GROUNDWATER

As was the case with on-site groundwater, when evaluating off-site groundwater, consideration must be given for the shallow and deep flow. Each flow system is discussed below.

#### *Off-Site Groundwater - Shallow Flow System*

For off-site groundwater in the shallow flow system, TCE in groundwater at wells S21, S23, S24, and S27 exceed the Tier II Cleanup Goals, as well as cis-1,2-DCE at S24 and 1,2-DCA at S9 (see Figure 24). Phenols, metals, and cyanide are below the Tier II Cleanup Goals.

#### *Off-Site Groundwater - Deep Flow System*

For off-site groundwater in the deep flow system, VOCs, phenols, metals, and cyanide are all below the Tier II Cleanup Goals.

## **REFERENCES**

### **5. REFERENCES**

ABB, 1998a. Voluntary Site Investigation Report. Prepared by ABB Environmental Services, Inc., April, 1998.

IDEM, 1996. Voluntary Remediation Program: Resource Guide. Indiana Department of Environmental Management, Office of Environmental Response.

**TABLE 3-1**  
**TIER II CLEANUP GOALS**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX, SOUTH BEND, INDIANA**

Constituent	Soil	On-Site Groundwater	Off-Site Groundwater
	1996 Tier II Non-Residential	1996 Tier II Non-Residential	1996 Tier II Residential
<b>VOLATILE ORGANIC COMPOUNDS (VOC)</b>			
<b>Gasoline/</b> <b>Painting</b> <b>Solvents</b>	Benzene	4.77	0.0986
	Ethylbenzene	1,000	10.22
	Toluene	1,000	20.44
	Xylene	1,000	204.4
	Methyl-tert-butyl ether	NA	6.95E+00
	Acetone	136.29	10.22
<b>Stoddard/ Naphthas</b>	Isopropylbenzene	1.00E+03	1.02E+01
	2-Methylnaphthalene	NA	2.04E+00
	Naphthalene	10,000	4.088
	n-Propylbenzene	1.00E+03	1.02E+01
	1,2,4-Trimethylbenzene	NA	5.11E+00
	1,3,5-Trimethylbenzene	1.00E+03	5.11E+00
<b>Chlorinated Solvents</b>	Chlorobenzene	3.16E+02	2.04E+00
	1,1-Dichloroethane	1,000	10.22
	1,1-Dichloroethene	0.08	0.007
	1,2-Dichloroethane	0.37	0.0314
	cis-1,2-Dichloroethene	102.49	1.022
	trans-1,2-Dichloroethene	NA	NA
	1,1,2-Dichloropropane	NA	4.21E-02
	Methylene Chloride	9.98E+00	3.81E-01
	Methyl Ethyl Ketone	146.24	5.11
	Tetrachloroethene	8.01	0.0561
	Trichloroethene	25.73	0.26
	1,1,1-Trichloroethane	1,000	9.198
	Vinyl Chloride	0.13	0.01
	Chloroethane	1,000	9.86E-01
<b>TOTAL PETROLEUM/HYDROCARBONS (TPH)</b>			
	JP-4	1,000	Analyze for
	JP-5 or Jet A	1,000	individual
	Lube oil or Waste Oil	10,000	constituents
<b>SEMI-VOLATILE ORGANIC COMPOUNDS/POLYCHLORINATED BIPHENYLS (SVOC)</b>			
<b>Polynuclear</b> <b>Aromatic</b> <b>Hydrocarbons</b>	Acenaphthene	10,000	6.13
	Anthracene	10,000	30.10
	Carbazole	10,000	0.15
	Chrysene	10,000	0.39
	Di-n-butylphthalate	10,000	10.20
	Bis(2-ethylhexyl)phthalate	16.43	0.2043
	Fluorene	10,000	4.09
	Benzo (a) Anthracene	103.88	0.01
	Benzo (b) Fluoranthene	354.98	0.01
	Benzo (k) Fluoranthene	3,759.12	0.0392
	Benzo (a) Pyrene	69.85	0.01
	Benzo (g,h,i) perylene	NA	3.07
	Fluoranthene	10,000	0.8176
	Naphthalene	10,000	4.088
	Phenanthrene	10,000	3.07
	Pyrene	10,000	3.066
	2-Methylphenol	375.93	5.11
<b>Phenols</b>	2,4-Dimethylphenol	170.00	2.04
	4-Methylphenol	427.24	5.11
	Total Phenols	658.78	12.264
	PCBs	PCBs, total	4.23
			0.0007
<b>INORGANICS</b>			
<b>Metals</b>	Arsenic	438	0.05
	Cadmium	730	0.0511
	Chromium VI	7,300	0.511
	Chromium III	10,000	102.2
	Total Chromium	NA	NA
	Cyanide	10,000	2.044
	Lead	400(e)	1.50E+02
	Mercury	87.6	0.0061
	Nickel	10,000	2.044
	Selenium	7,300	0.511
	Zinc	10,000	30.66
<b>Note:</b> NA = Not applicable; constituent not detected in this media.			

TABLE 4-1  
Summary of Comparison to Tier II Cleanup Goals  
Voluntary Site Investigation  
AlliedSignal Industrial Complex - South Bend, Indiana

Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
Area 2	Plant 2 Basement	<ul style="list-style-type: none"> <li>Geoprobe borings advanced in this area indicate that a large area of free-phase oil was not present behind the wall, but may have existed in the past (as evidenced by oil-stained soils).</li> <li>A comparison of the groundwater elevation to the estimated bottom of footing elevations indicated that the oil may have been able to migrate beyond the wall when the groundwater elevation was seasonally lower.</li> </ul>	<ul style="list-style-type: none"> <li>No soil samples collected.</li> <li>Groundwater samples analyzed for VOCs. Results were below the Tier II Cleanup Goal.</li> </ul>
	Alleged Former Disposal Area/ Carbon Brake Expansion	<ul style="list-style-type: none"> <li>VOCs associated with fuels and chlorinated solvents, PNAs, phenols; heavier fractions of fuels and oils (as TPH); and PCBs were detected in the soils south of the existing Carbon Brake building.</li> <li>Chlorinated solvents were detected in groundwater at and downgradient of the impacted soils.</li> <li>PCBs were detected in groundwater samples collected at one location using a bailer. PCBs were non-detect when "low-flow" groundwater samples were collected.</li> <li>Inorganics in soils and groundwater are not of concern.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil (i.e., 1,1-DCE, PCE, TCE, and vinyl chloride) exceed Tier II Cleanup Goals.</li> <li>At one location (03GP014), total VOCs exceeded the maximum upper limit of 1,000 mg/kg.</li> <li>TPH in soil slightly exceeded the risk-based criteria of 6,000 mg/kg in three samples.</li> <li>PCBs in soil exceeded the Tier II Cleanup Goal.</li> <li>Phenols, phthalates, PNAs, and inorganics in soil are below the Tier II Cleanup Goals.</li> <li>Cis-1,2-DCE and vinyl chloride in groundwater north of this area exceeded the Tier II Cleanup Goals.</li> <li>Inorganics in groundwater are below the Tier II Cleanup Goals.</li> </ul>
Area 3/11	I-Beam Building	<ul style="list-style-type: none"> <li>VOCs were detected in borings located along the eastern side of the I- Beam building.</li> <li>TPH was detected in across the I-Beam building area.</li> <li>Inorganics impacts to soils or groundwater do not appear to be of concern in this area.</li> <li>Downgradient groundwater is impacted with naphtha- and fuel-related constituents and chlorinated solvents. Although a soil source was not located during VSI activities, former dry wells located near the southwest corner of the building may be the source of observed groundwater impacts.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> <li>TPH in soil exceeds the risk-based criteria of 6,000 mg/kg at two locations.</li> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> <li>Vinyl chloride was detected in groundwater downgradient of this area above the Tier II Cleanup Goal.</li> <li>Inorganics in groundwater are below the Tier II Cleanup Goals.</li> </ul>
Area 4/16			

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**TABLE 4-1**  
**Summary of Comparison to Tier II Cleanup Goals**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex - South Bend, Indiana**

Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
	Plant 1/9 UST	<ul style="list-style-type: none"> <li>1,1,1-TCA and TCE were detected in soil samples. These detections are believed to be associated with historical operations rather than the USTs.</li> <li>An elevated level of TPH (9,300 mg/kg) was detected adjacent to a former quench oil tank. Samples collected above and below this interval were non detect for TPH.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>Vinyl chloride in one groundwater sample exceeded the Tier II Cleanup Goal. The vinyl chloride detection is believed to be associated with historical operations rather than the USTs.</li> </ul>
	Plant 6/16 USTs	<ul style="list-style-type: none"> <li>Soils were impacted, to varying degrees, with VOCs.</li> <li>Elevated levels of TPH was also detected in soil at many locations.</li> <li>Inorganics impacts to soils or groundwater do not appear to be of concern in this area.</li> </ul> <p>Groundwater is impacted with VOCs.</p>	<ul style="list-style-type: none"> <li>VOCs in soil (i.e., 1,1-DCE, cis-1,2-DCE, benzene, toluene, and xylenes) exceed the Tier II Cleanup Goals.</li> <li>PNAs in soil are below the Tier II Cleanup Goals.</li> <li>TPH in one soil sample exceeds the risk-based criteria of 6,000 mg/kg.</li> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> <li>VOCs in groundwater (i.e., 1,2-DCA, cis-1,2-DCE, 1,2-DCP, TCE, vinyl chloride, and benzene) in the northeast corner of this area exceeded the Tier II Cleanup Goal.</li> </ul>
Area 5 Former USTs	Plant 14 USTs	<ul style="list-style-type: none"> <li>VOCs and TPH were detected in soils.</li> <li>Metals in soils were consistent with expected background ranges.</li> </ul> <p>Chlorinated VOCs were detected in groundwater samples collected adjacent to and downgradient from the Plant 14 area. The source of these constituents is not known, but is not believed to be associated with the former UST systems.</p>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> <li>PNAs were detected in one soil sample. The detected concentrations are below the Tier II Cleanup Goals.</li> <li>TPH in soil are below the risk-based criteria of 6,000 mg/kg.</li> <li>Metals in soil are below the Tier II Cleanup Goals.</li> <li>VOCs in groundwater are below the Tier II Cleanup Goals.</li> </ul>
	Plant 19 USTs	<ul style="list-style-type: none"> <li>VOCs and TPH were detected in soil.</li> <li>Metals in soils were consistent with expected background ranges.</li> <li>VOCs were detected in groundwater samples collected both upgradient and downgradient of this area. The detections may be associated with an upgradient source and not with the former UST systems in the area.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> <li>TPH in soils is below the risk-based criteria.</li> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> <li>VOCs in groundwater are below the Tier II Cleanup Goals.</li> </ul>
	Transportation Area USTs	<ul style="list-style-type: none"> <li>TPH was detected in soil at very low levels (&lt;18 mg/kg).</li> <li>Phenanthrene, a PNA, was detected in groundwater at low levels (&lt;7.4 ug/L).</li> </ul>	<ul style="list-style-type: none"> <li>TPH in soils is below the risk-based criteria.</li> <li>PNAs in groundwater are below the Tier II Cleanup Goals.</li> </ul>

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**TABLE 4-1**  
**Summary of Comparison to Tier II Cleanup Goals**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex - South Bend, Indiana**

Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
Area 5 Former USI's (cont'd)	Transportation	<ul style="list-style-type: none"> <li>VOCs were detected in soils at scattered locations.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> </ul>
	Area - General Conditions	<ul style="list-style-type: none"> <li>Inorganics were detected in soils at concentrations consistent with typical background levels.</li> <li>VOCs were detected in groundwater at various locations.</li> </ul>	<ul style="list-style-type: none"> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> <li>VOCs in groundwater (1,1-DCE, cis-1,2-DCE, TCE, and vinyl chloride) are above the Tier II Cleanup Goals.</li> </ul>
Area 6 Potential Spills and Releases	Plant 11 - Heat Treating Area	<ul style="list-style-type: none"> <li>Low levels of VOCs and PNAs detected in soil.</li> <li>TPH was detected in one soil sample at 38 mg/kg.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs and PNAs in soil are below Tier II Cleanup Goals.</li> <li>TPH in soil is below the risk-based criteria.</li> </ul>
	Plant 12 - Machinery Sumps	<ul style="list-style-type: none"> <li>TPH detected in soil at 5 of 15 locations.</li> <li>VOCs detected in groundwater. The impacts to groundwater appear to be related to an upgradient source.</li> </ul>	<ul style="list-style-type: none"> <li>TPH in soil is below the risk-based criteria.</li> <li>VOCs in groundwater are below the Tier II Cleanup Goals.</li> </ul>
Area 7 Solid Waste Management Units	SWMU 5	<ul style="list-style-type: none"> <li>No VOCs were detected in soil.</li> </ul>	<ul style="list-style-type: none"> <li>No VOCs detected.</li> </ul>
	BASD Outdoor Waste Storage	<ul style="list-style-type: none"> <li>PNAs were detected at low levels in soil.</li> <li>Inorganics were detected in soil at typical background levels.</li> <li>TPH was detected in one soil sample at 100 mg/kg.</li> </ul>	<ul style="list-style-type: none"> <li>PNAs in soil are below the Tier II Cleanup Goals.</li> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> <li>TPH in soil is below the risk-based criteria.</li> </ul>
Area 7 Solid Waste Management Units	SWMU 13	<ul style="list-style-type: none"> <li>Inorganics in soil were consistent with typical background levels.</li> </ul>	<ul style="list-style-type: none"> <li>Inorganics in soil are below Tier II Cleanup Goals.</li> </ul>
	Wastewater Treatment Plant		
	SWMU 15	<ul style="list-style-type: none"> <li>Neither VOCs nor TPH were detected in soils.</li> <li>Inorganics in soil consistent with typical background levels.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs and TPH were non-detectable in soils.</li> <li>Inorganics in soil are below Tier II Cleanup Goals.</li> <li>VOCs in groundwater are below Tier II Cleanup Goals.</li> </ul>
Area 7 Solid Waste Management Units	Oil Ultrafiltration System	<ul style="list-style-type: none"> <li>VOCs were detected in groundwater. The impacts to groundwater appear to be related to an upgradient source.</li> </ul>	
	SWMU 16	<ul style="list-style-type: none"> <li>PCE was detected in one soil sample.</li> </ul>	<ul style="list-style-type: none"> <li>PCE detection in soil is below the Tier II Cleanup Goal.</li> </ul>
	10,000-Gallon Lovejoy Tank	<ul style="list-style-type: none"> <li>TPH was detected in one soil sample at 420 mg/kg.</li> <li>PNAs were not detected in the soil samples.</li> <li>Inorganics in soil were consistent with typical background levels.</li> </ul>	<ul style="list-style-type: none"> <li>The TPH detection in soil is below the risk-based criteria.</li> <li>PNAs were non-detectable in soils.</li> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> </ul>
Area 7 Solid Waste Management Units	SWMU 17	<ul style="list-style-type: none"> <li>Sampling was not completed because the area could not be located. The area is likely addressed under Area 6.</li> </ul>	Not applicable
	Oil Waste and Scrap Metal Room		

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**TABLE 4-1**  
**Summary of Comparison to Tier II Cleanup Goals**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex - South Bend, Indiana**

Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
Area 7 Solid Waste Management Units (cont'd)	SWMU 18	<ul style="list-style-type: none"> <li>VOCs and PNAs in soils were non-detectable.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs and PNAs were non-detectable in soils.</li> </ul>
	Department 200	<ul style="list-style-type: none"> <li>TPH was detected in two soil samples at 12 mg/kg.</li> </ul>	<ul style="list-style-type: none"> <li>TPH in soil were below the risk-based criteria.</li> </ul>
	Temporary Drum Storage Area	<ul style="list-style-type: none"> <li>Inorganics in soil were consistent with typical background levels.</li> <li>VOCs were not detected in groundwater.</li> </ul>	<ul style="list-style-type: none"> <li>Inorganics in soil were below Tier II Cleanup Goals.</li> <li>VOCs were not detected in groundwater.</li> </ul>
	SWMU 19	<ul style="list-style-type: none"> <li>PCE was detected in soil samples from two borings located in the central and eastern portions of Plant 7.</li> <li>PNAs were detected in soil at one location.</li> <li>TPH was detected in soil at concentrations <math>\leq 560</math> mg/kg.</li> <li>Inorganics in soil were consistent with typical background levels.</li> <li>Vinyl chloride was detected in a downgradient groundwater sample.</li> </ul>	<ul style="list-style-type: none"> <li>PCE detection in soil is below the Tier II Cleanup Goal.</li> <li>PNAs in soil are below the Tier II Cleanup Goal.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>Inorganics in soil are below the Tier II Cleanup Goal.</li> <li>Vinyl chloride in groundwater is above the Tier II Cleanup Goal.</li> </ul>
	SWMU 22	<ul style="list-style-type: none"> <li>VOCs and PNAs not detected in soils.</li> <li>TPH was detected in one soil sample collected just above the water table at 3,300 mg/kg. The overlying soils were non-detectable for TPH indicating that the TPH was associated with groundwater impacts.</li> <li>PCBs were not detected in soil.</li> <li>Inorganics in soil were consistent with typical background levels.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs and PNAs not detected in soils.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>Inorganics in soil are below the Tier II Cleanup Goals.</li> <li>PCBs were not detected in soil.</li> </ul>
	I-Beam Building	<ul style="list-style-type: none"> <li>VOCs were detected in soils near several of the former dry wells.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> </ul>
	Stormwater Drainage System	<ul style="list-style-type: none"> <li>Naphthalene, which is included in both the VOC and PNA analyses, was detected in soil.</li> <li>TPH was detected in soil at several locations.</li> <li>Inorganics were detected in soils at concentrations consistent with typical background levels.</li> <li>VOCs were detected in groundwater at the dry wells.</li> </ul>	<ul style="list-style-type: none"> <li>Naphthalene in soil is below the Tier II Cleanup Goals.</li> <li>TPH in soil exceeds the risk-based criteria of 6,000 mg/kg adjacent to one dry well.</li> <li>Vinyl chloride in one groundwater sample adjacent to the retention pond exceeds the Tier II Cleanup Goal. This exceedance is likely related to Area 3/11.</li> </ul>

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**TABLE 4-1**  
**Summary of Comparison to Tier II Cleanup Goals**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex - South Bend, Indiana**

Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
Area 9	Plant 3/3A	<ul style="list-style-type: none"> <li>VOCs were detected in some soil samples beneath the Plant 3 floor.</li> <li>Higher levels of VOCs and TPH were detected in soils outside the south wall adjacent to Dock 10.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soils beneath the Plant 3 floor are below the Tier II Cleanup Goals.</li> <li>VOCs in soils outside the south wall exceed the Tier II Cleanup Goals.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>VOCs in groundwater (cis-1,2-DCE, TCE, vinyl chloride, and benzene) exceed the Tier II Cleanup Goals.</li> <li>Inorganics in soil and groundwater are below the Tier II Cleanup Goals.</li> </ul>
	Former Plating and Anodizing Operation	<ul style="list-style-type: none"> <li>Inorganics in soil were consistent with typical background levels.</li> <li>VOCs were detected in groundwater and the source appears to be northwest of the former plating operation.</li> <li>Inorganics in groundwater do not appear to be of concern.</li> </ul>	
	Barrel Storage Building	<ul style="list-style-type: none"> <li>PNAs detected in soils just east of the building, adjacent to a former UST.</li> <li>TPH detected in soils at concentrations <math>\leq 16</math> mg/kg.</li> <li>VOCs were detected in a groundwater sample collected along the upgradient side of the building. The detection is likely associated with an upgradient source.</li> </ul>	<ul style="list-style-type: none"> <li>PNAs in soil are the Tier II Cleanup Goals.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>VOCs in groundwater are below the Tier II Cleanup Goals.</li> </ul>
Area 12	Plant 12	<ul style="list-style-type: none"> <li>VOCs detected in two soil samples collected near the water table.</li> <li>Inorganics detected in soil and groundwater are not of concern.</li> <li>VOCs were detected in groundwater, but may be related to upgradient sources.</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>VOCs in groundwater are below the Tier II Cleanup Goals.</li> <li>Inorganics in soil and groundwater are below the Tier II Cleanup Goals.</li> </ul>
	Former Chromium Anodizing Operations		
Area 13	Plant 10	<ul style="list-style-type: none"> <li>VOCs were detected in soils (I, I, I-TCA, TCE and vinyl chloride)</li> </ul>	<ul style="list-style-type: none"> <li>VOCs in soil are below the Tier II Cleanup Goals.</li> </ul>
	Former Electroplating Operations	<ul style="list-style-type: none"> <li>Saturated soils samples indicate that the VOC impacts are present as deep as 20 feet below the water table.</li> <li>VOCs were detected in groundwater at this area.</li> <li>Inorganics in soil and groundwater at some locations were elevated above typical background levels.</li> </ul>	<ul style="list-style-type: none"> <li>Lead in soil exceeds the Tier II Cleanup Goal in one sample (I3GPU06).</li> <li>VOCs in groundwater (I, I-DCE, TCE, and vinyl chloride) exceed the Tier II Cleanup Goals.</li> <li>Metals in groundwater are below the Tier II Cleanup Goals.</li> <li>Cyanide in one groundwater sample (I3GP006) exceeded the Tier II Cleanup Goal.</li> </ul>

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**TABLE 4-1**  
**Summary of Comparison to Tier II Cleanup Goals**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex - South Bend, Indiana**

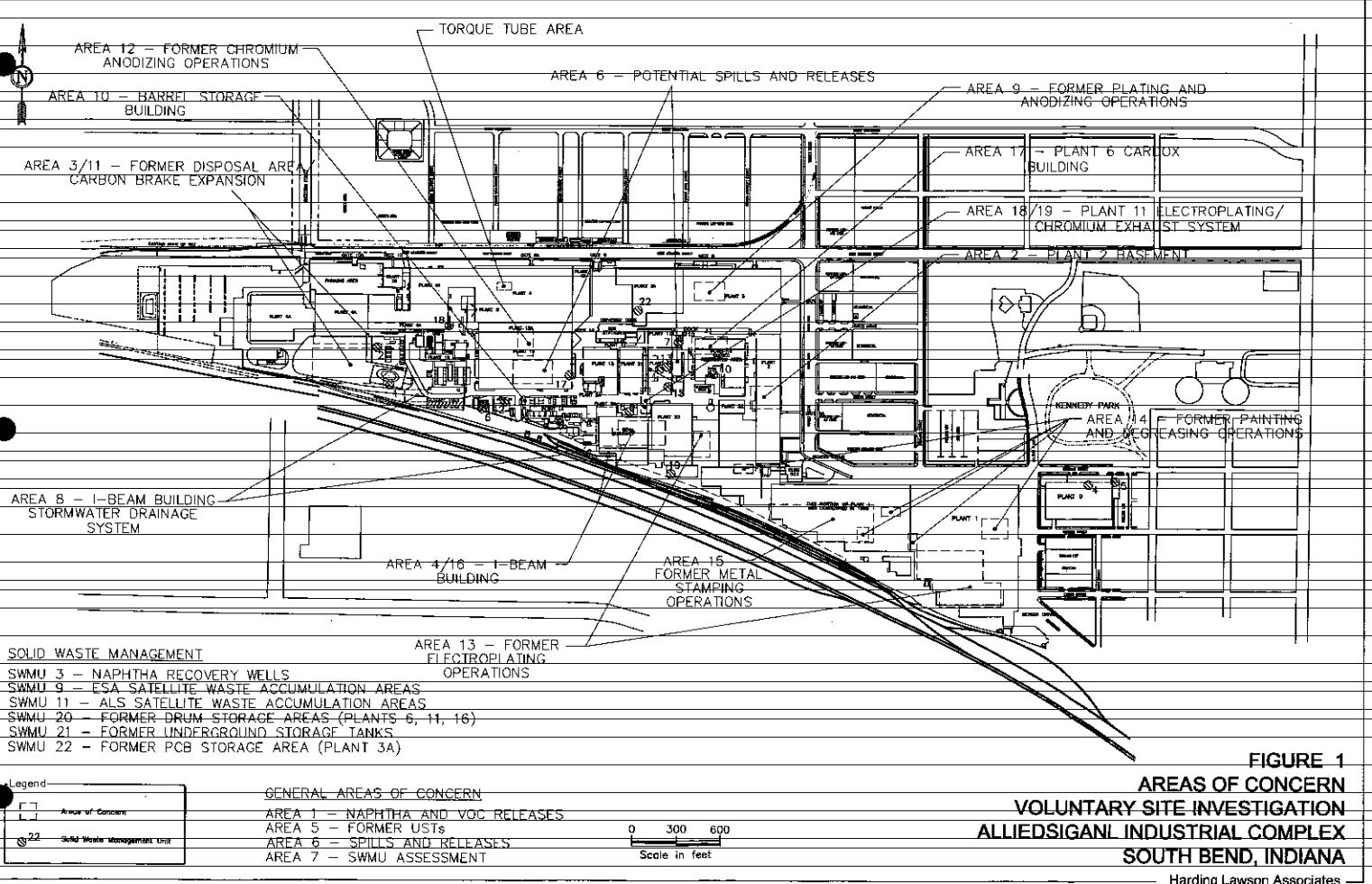
Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
Area 13 (cont'd)	Plant 31	<ul style="list-style-type: none"> <li>No VOCs were detected in soils.</li> </ul>	<ul style="list-style-type: none"> <li>No VOCs were detected in soils or groundwater.</li> </ul>
	Former Electroplating Operations	<ul style="list-style-type: none"> <li>Metals in soils were slightly elevated relative to expected background ranges</li> <li>No VOCs were detected in groundwater, and metals in groundwater were consistent with typical background.</li> </ul>	<ul style="list-style-type: none"> <li>Metals in soils and groundwater were below Tier II Cleanup Goals.</li> </ul>
Area 14	Plant 1	<ul style="list-style-type: none"> <li>VOCs were detected in soils.</li> </ul>	<ul style="list-style-type: none"> <li>TCE (a VOC) exceeds the Tier II Cleanup Goal in one soil sample.</li> </ul>
	Former Painting and Degreasing Operations	<ul style="list-style-type: none"> <li>PNAs were detected in one soil sample (14GP021).</li> <li>TPH was detected in soils at varying concentrations.</li> <li>VOCs were detected in groundwater near each area.</li> <li>Saturated soils samples indicate that chlorinated VOC impacts are present as deep as 20 feet below the water table.</li> <li>Metals in soils and groundwater were slightly elevated relative to expected background ranges</li> </ul>	<ul style="list-style-type: none"> <li>PNAs in soil are below the Tier II Cleanup Goal.</li> <li>TPH in soil is below the risk-based criteria.</li> <li>Lead and cadmium in soil at the western most Painting/Degreasing Area exceeds the Tier II Cleanup Goals.</li> <li>VOCs in groundwater (1,1-DCE, 1,2-DCE, TCE, and vinyl chloride) exceed the Tier II Cleanup Goal.</li> <li>Metals in groundwater were below the Tier II Cleanup Goal.</li> </ul>
Area 15	Plant 1	<ul style="list-style-type: none"> <li>VOCs were detected in some soil samples.</li> </ul>	<ul style="list-style-type: none"> <li>TCE exceeds the Tier II Cleanup Goal in one soil sample.</li> </ul>
	Former Metal Stamping Operations	<ul style="list-style-type: none"> <li>TPH was detected in soils at varying concentrations.</li> <li>Metals in soils and groundwater were slightly elevated relative to expected background ranges</li> </ul>	<ul style="list-style-type: none"> <li>TPH in soil exceeds the risk-based criteria of 6,000 mg/kg in one sample.</li> <li>VOCs in groundwater (1,2-DCA, cis-1,2-DCE, TCE and vinyl chloride) exceed the Tier II Cleanup Goals.</li> <li>Metals in soil and groundwater are below the Tier II Cleanup Goals.</li> </ul>
Area 17	Plant 6 CARDOX Building	<ul style="list-style-type: none"> <li>This area is located inside the Area 5 - Plant 6/16 and is addressed under Plant 6/16.</li> </ul>	Not applicable
Area 8/19	Plant 11 Electroplating	<ul style="list-style-type: none"> <li>PCE was detected in a soil sample.</li> <li>Chromium in soil was above typical background.</li> <li>VOCs were detected in groundwater; however, they are likely unrelated to the electroplating operation.</li> <li>Metals in groundwater were above typical background levels.</li> </ul>	<ul style="list-style-type: none"> <li>PCE in soil is below the Tier II Cleanup Goal.</li> <li>Metals in soil (including chromium) are below the Tier II Cleanup Goals.</li> <li>Vinyl chloride in one groundwater sample exceeded the Tier II Cleanup Goal. The vinyl chloride is likely unrelated to the electroplating operation.</li> <li>Metals in groundwater were below the Tier II Cleanup Goals.</li> </ul>

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**TABLE 4-1**  
**Summary of Comparison to Tier II Cleanup Goals**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex - South Bend, Indiana**

Area No.	Description	Summary of VSI Findings	Results of Tier II Comparison
Area 18/19 (cont'd)	Exhaust Tunnel	<ul style="list-style-type: none"> <li>Material build up in the exhaust tunnel contains significant levels of hexavalent chromium.</li> <li>Chromium was detected in surface soils in the area of the exhaust stack, but at concentrations below the RBSL.</li> </ul>	<ul style="list-style-type: none"> <li>The sample of material from inside the exhaust tunnel was not compared to the Tier II Cleanup Goal because it is a source material and not a soil or groundwater sample.</li> <li>Although elevated concentrations of chromium were detected, this area will be addressed during shut-down of the electroplating operations.</li> </ul>
Plant 4	Torque Tube Area	<ul style="list-style-type: none"> <li>TCE was detected in soils.</li> <li>TPH was detected in soil at concentrations <math>\leq 16 \text{ mg/kg}</math>.</li> </ul>	<ul style="list-style-type: none"> <li>TCE in soil is below the Tier II Cleanup Goal.</li> <li>TPH in soil is below the risk-based criteria of 6,000 mg/kg.</li> </ul>
	VOC and Naphtha Releases	<ul style="list-style-type: none"> <li>An intermediate silt/clay layer separates the shallow and deep flow systems.</li> <li>Free-product is limited to localized areas, and indicates that the naphtha recovery system was effective in removing the free-phase naphtha.</li> <li>Chlorinated solvents were detected in on-site groundwater within the shallow flow system. Areas with the highest solvent concentrations in shallow groundwater were south of the Carbon Brake Building, in the area of Plant 3A, and in Plant 1.</li> <li>Volatile fuel constituents were also detected within a smaller area inside the on-site chlorinated VOC plume.</li> <li>During the VSI, groundwater samples collected for metals analysis were field filtered, and these data indicate that metals are of concern only at limited areas within Plant 1. Cyanide is also of concern in Plant 1 groundwater.</li> <li>The naphtha and VOC recovery system (once rehabilitated) are effective in containing groundwater impacts to the shallow flow system on-site.</li> <li>Groundwater impacts were detected off-site to the northeast of the complex, but these impacts occurred prior to installation of the VOC recovery system. Concentrations of VOCs in off-site groundwater have remained stable or decreased since installation of the VOC recovery system.</li> <li>Impacts to the deep flow system are limited to chlorinated solvents beneath and northeast of Plant 1.</li> </ul>	<p><i>On-Site Groundwater - Shallow Flow System</i></p> <ul style="list-style-type: none"> <li>VOCs (1,1-DCE, 1,2-DCA, 1,2-DCP, TCE, vinyl chloride, and benzene) were detected above the Tier II Cleanup Goals, primarily at sampling locations near soil source areas.</li> <li>Cyanide was detected in one Geoprobe groundwater sample collected at the Plant 10 Electroplating Area above the Tier II Cleanup Goal.</li> <li>Metals and phenols are below the Tier II Cleanup Goal.</li> </ul> <p><i>On-Site Groundwater - Deep Flow System</i></p> <ul style="list-style-type: none"> <li>VOCs are below the Tier II Cleanup Goals, excluding vinyl chloride at well D4.</li> <li>Phenols, metals, and cyanide are below the Tier II Cleanup Goals.</li> </ul> <p><i>Off-Site Groundwater - Shallow Flow System</i></p> <ul style="list-style-type: none"> <li>TCE at wells S21, S23, S24, and S27 exceed the Tier II Cleanup Goals, as well as cis-1,2-DCE at S24 and 1,2-DCA at S9.</li> <li>Phenols, metals, and cyanide are below the Tier II Cleanup Goals.</li> </ul> <p><i>Off-Site Groundwater - Deep Flow System</i></p> <ul style="list-style-type: none"> <li>VOCs, phenols, metals, and cyanide are all below the Tier II Cleanup Goals.</li> </ul>
Area 1			

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**FIGURE 1**  
**AREAS OF CONCERN**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGMA INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

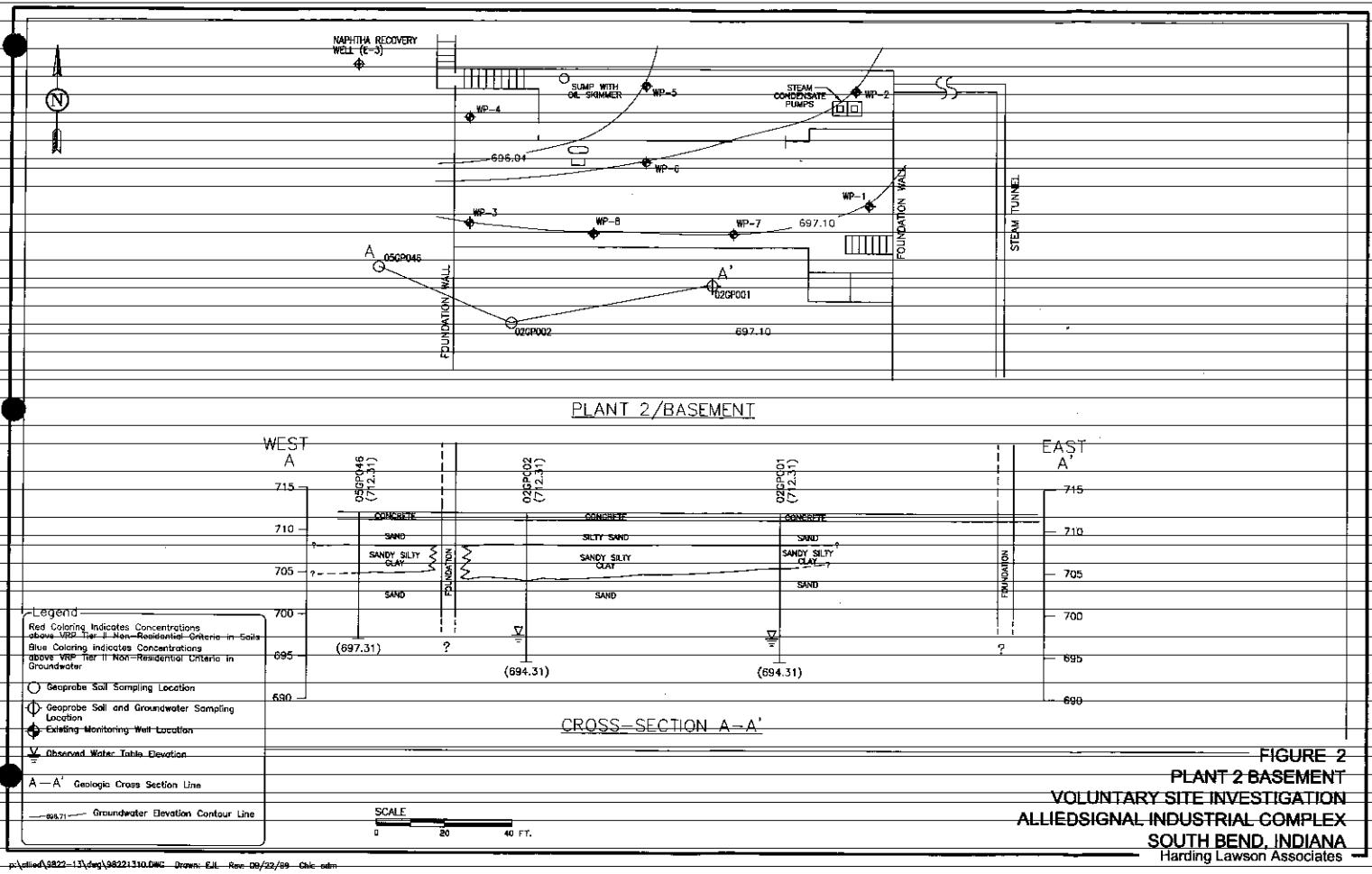
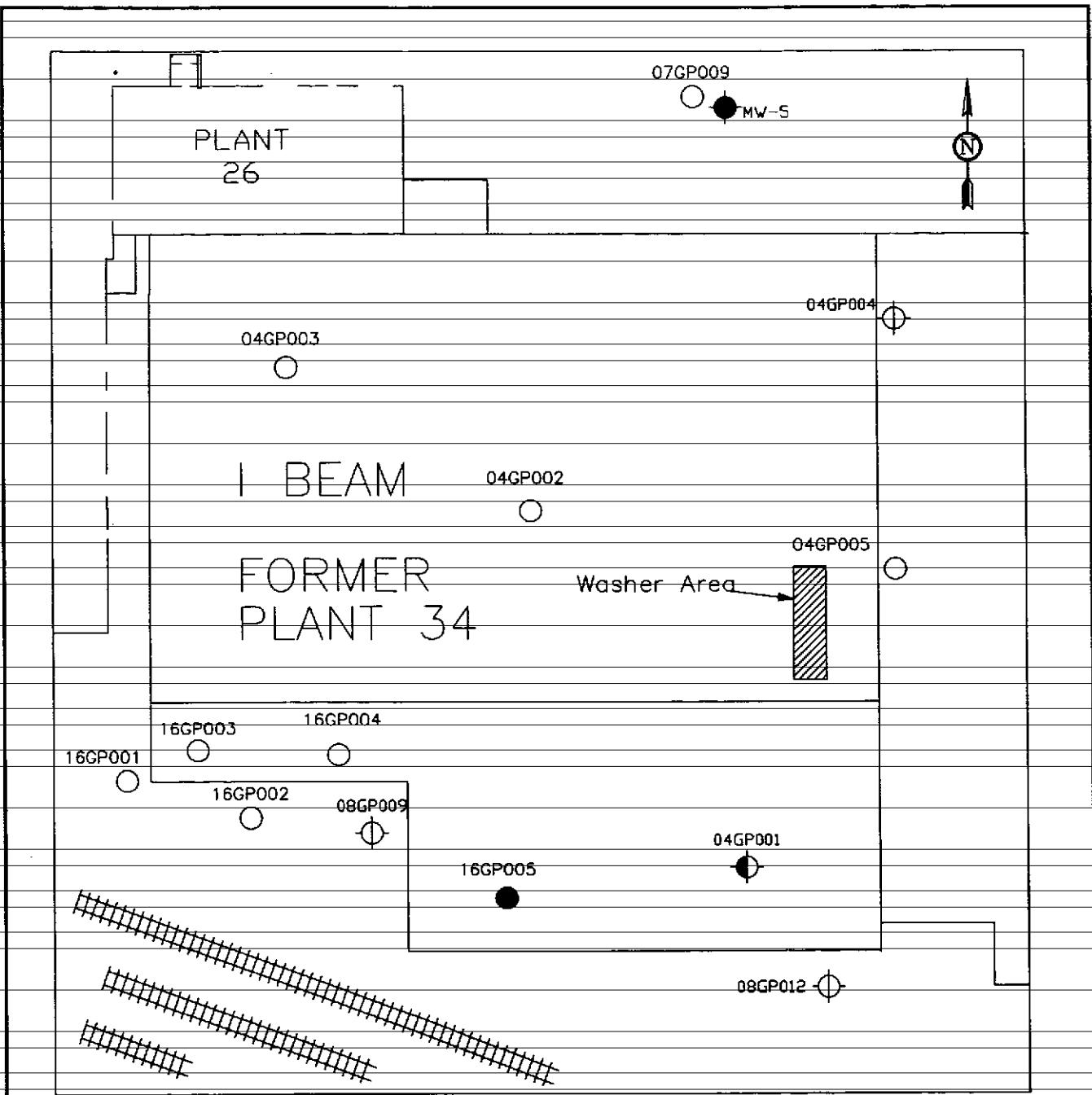


FIGURE 2

PLANT 2 BASEMENT  
VOLUNTARY SITE INVESTIGATION  
ALLIEDSIGNAL INDUSTRIAL COMPLEX  
SOUTH BEND, INDIANA

Harding Lawson Associates



**Legend**

Red Coloring Indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Soils

Blue Coloring Indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Groundwater

○ Geoprobe Soil Sampling Location

○ Geoprobe Soil and Groundwater Sampling Location

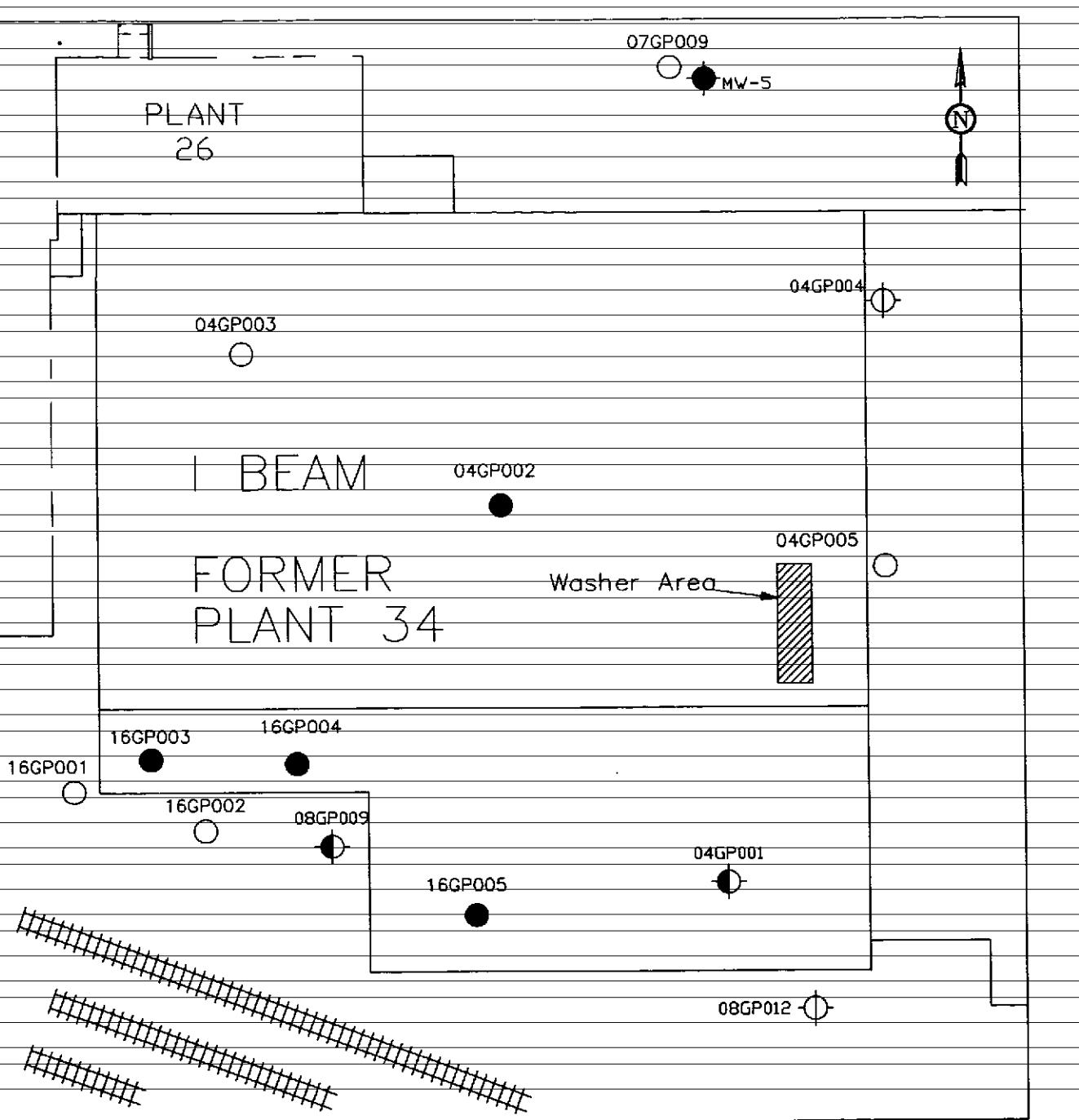
● Water Table Monitoring Well

**SCALE**

0 50 100 FT.

**FIGURE 3**  
**I-BEAM BUILDING**  
**SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates



#### Legend

Red Coloring Indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Soils

Blue Coloring Indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Groundwater

○ Geoprobe Soil Sampling Location

○ Geoprobe Soil and Groundwater Sampling Location

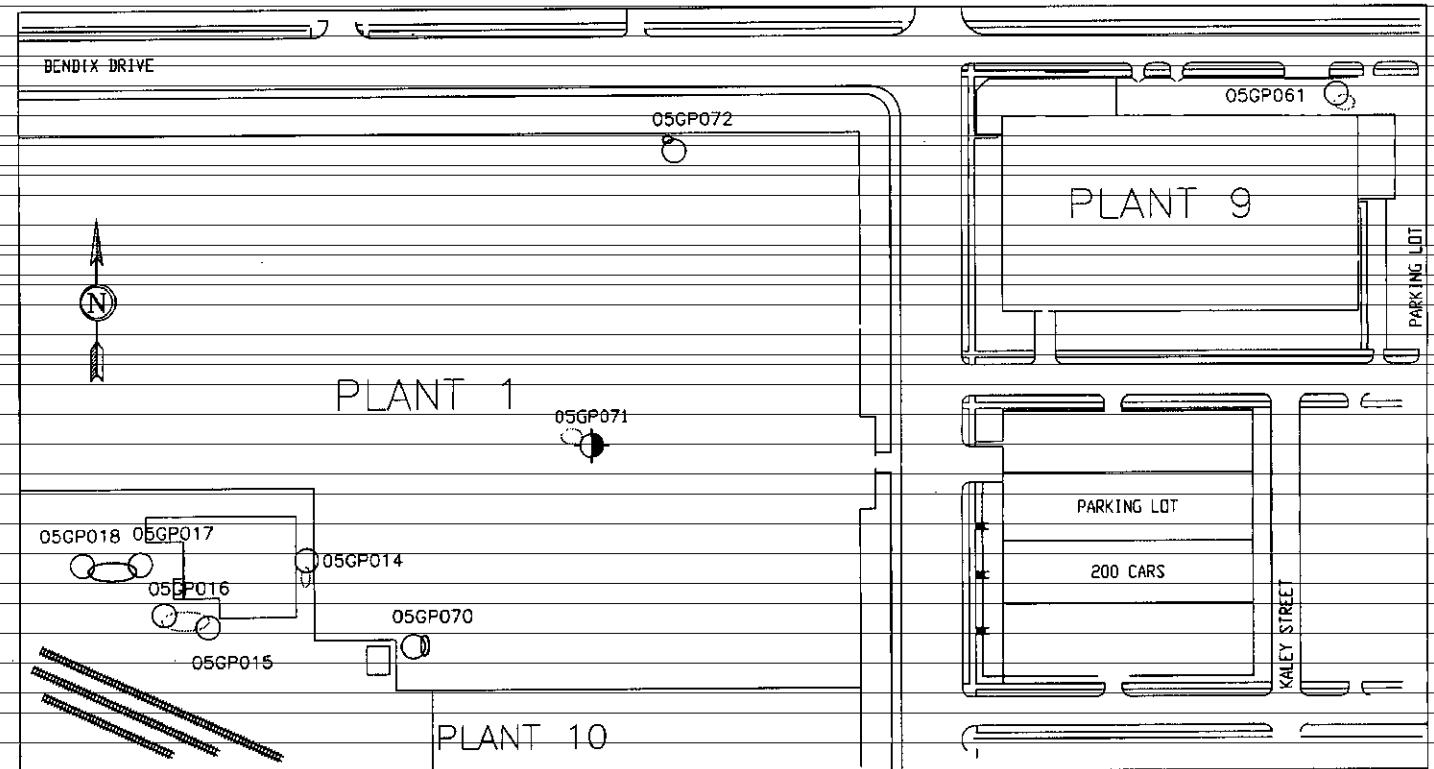
● Water Table Monitoring Well

#### SCALE

0 50 100 FT.

**FIGURE 4**  
**I-BEAM BUILDING**  
**SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates



**Legend**

Red Coloring indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Soils

Blue Coloring indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Groundwater

○ Former UST Location

○ Geoprobe Soil Sampling Location

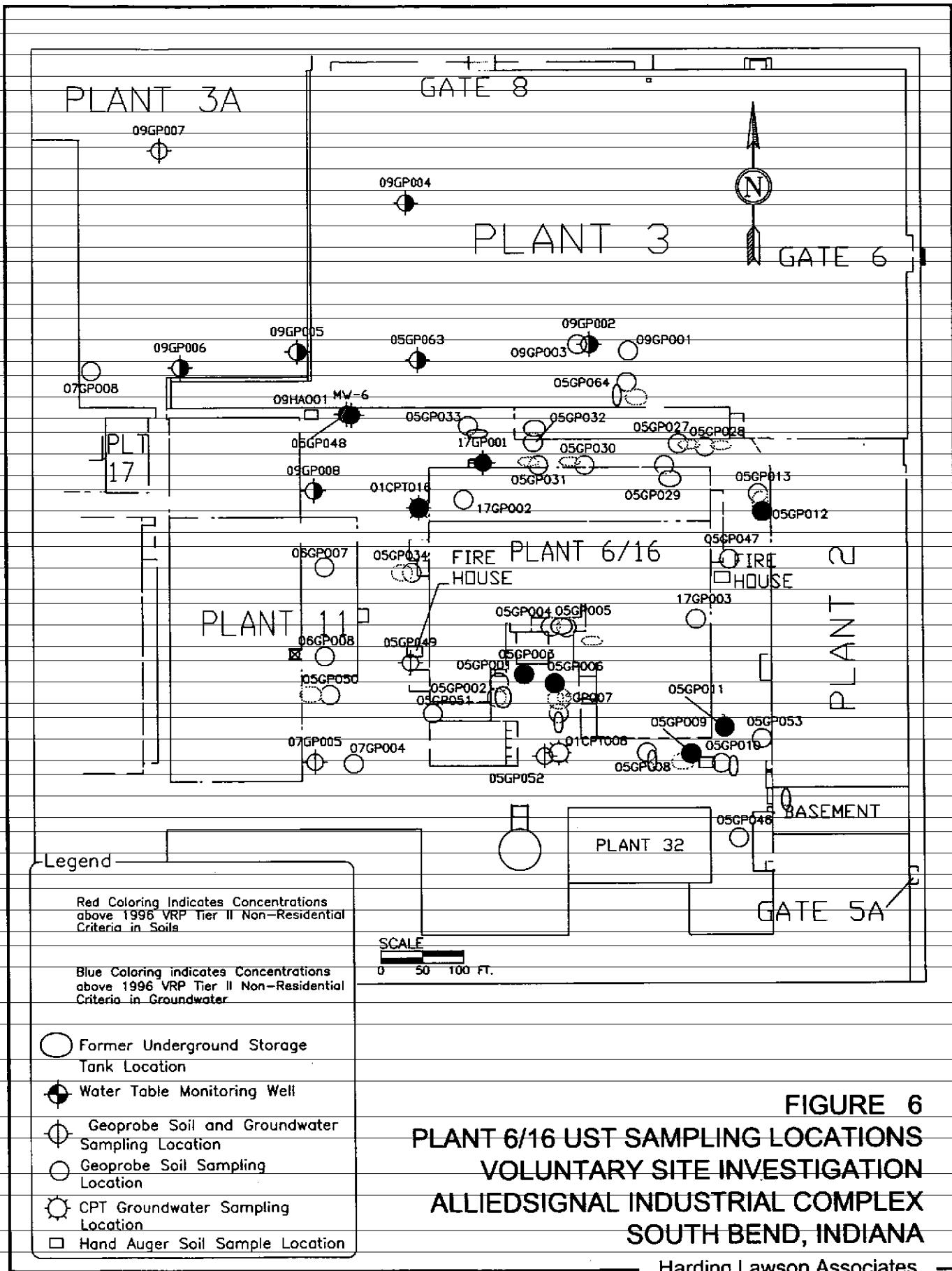
○ Geoprobe Soil and Groundwater Sampling Location

**FIGURE 5**

**PLANT 1/9 UST SAMPLING LOCATIONS  
VOLUNTARY SITE INVESTIGATION  
ALLIEDSIGNAL INDUSTRIAL COMPLEX  
SOUTH BEND, INDIANA**

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**FIGURE 6**

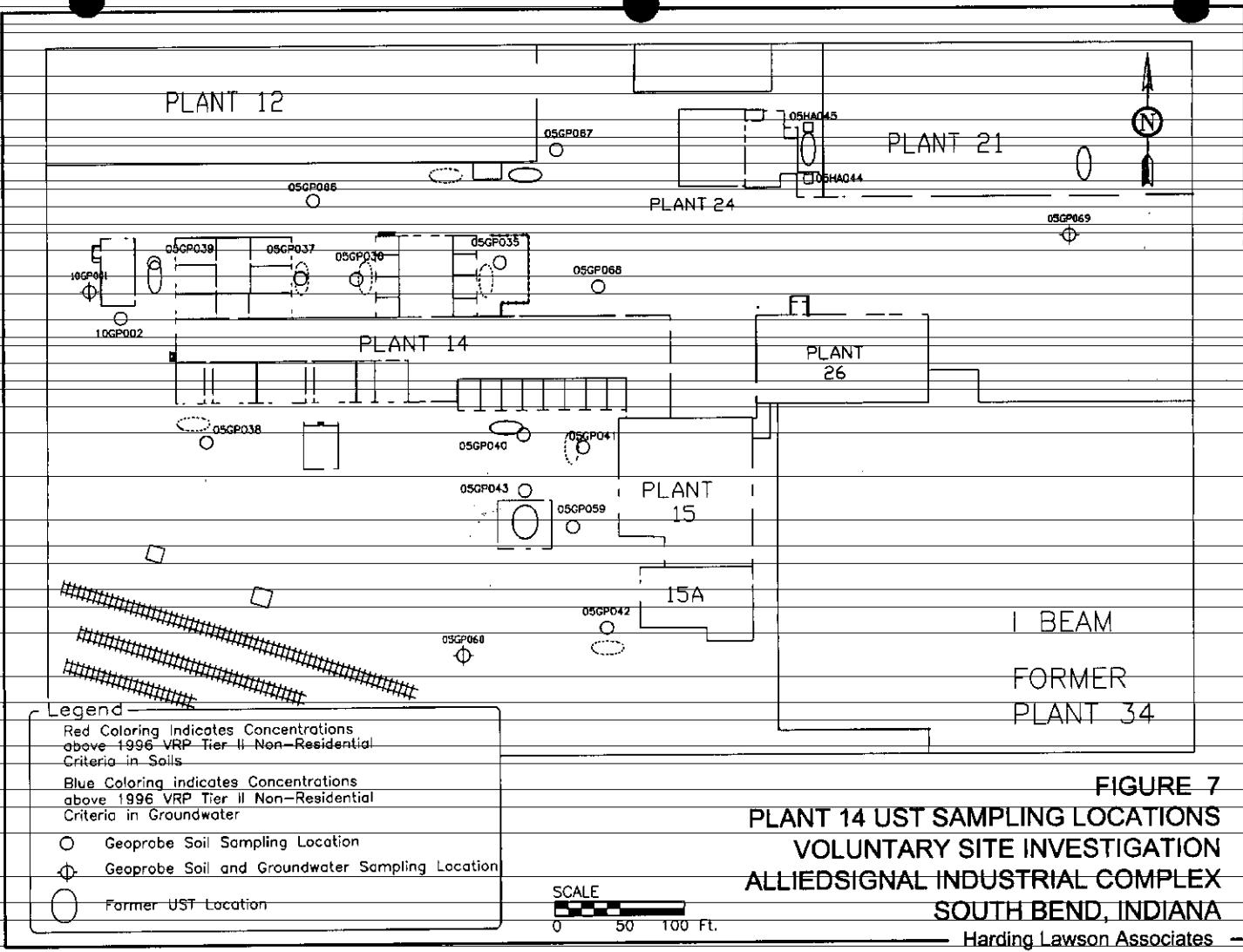
**PLANT 6/16 UST SAMPLING LOCATIONS**

**VOLUNTARY SITE INVESTIGATION**

**ALLIEDSIGNAL INDUSTRIAL COMPLEX**

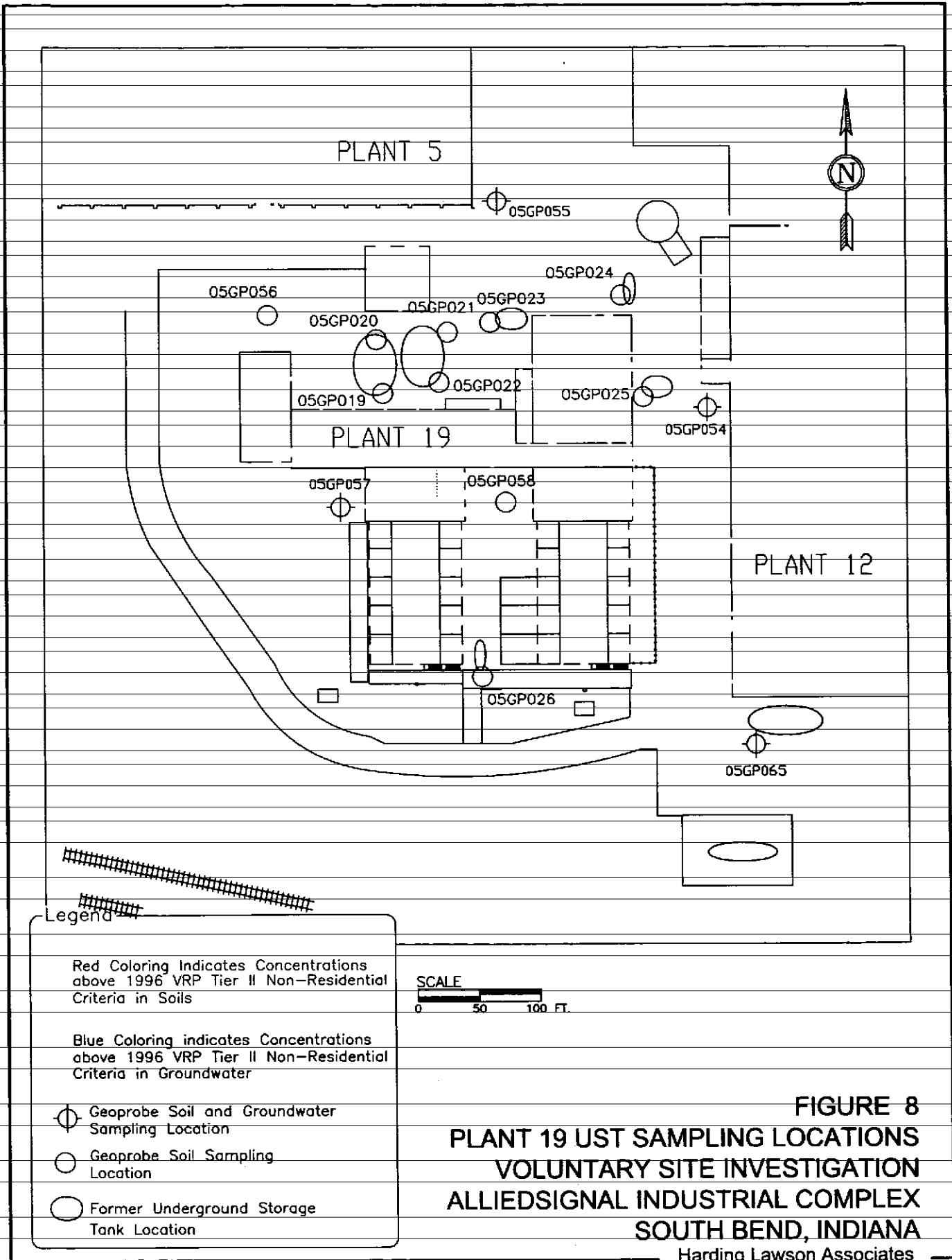
**SOUTH BEND, INDIANA**

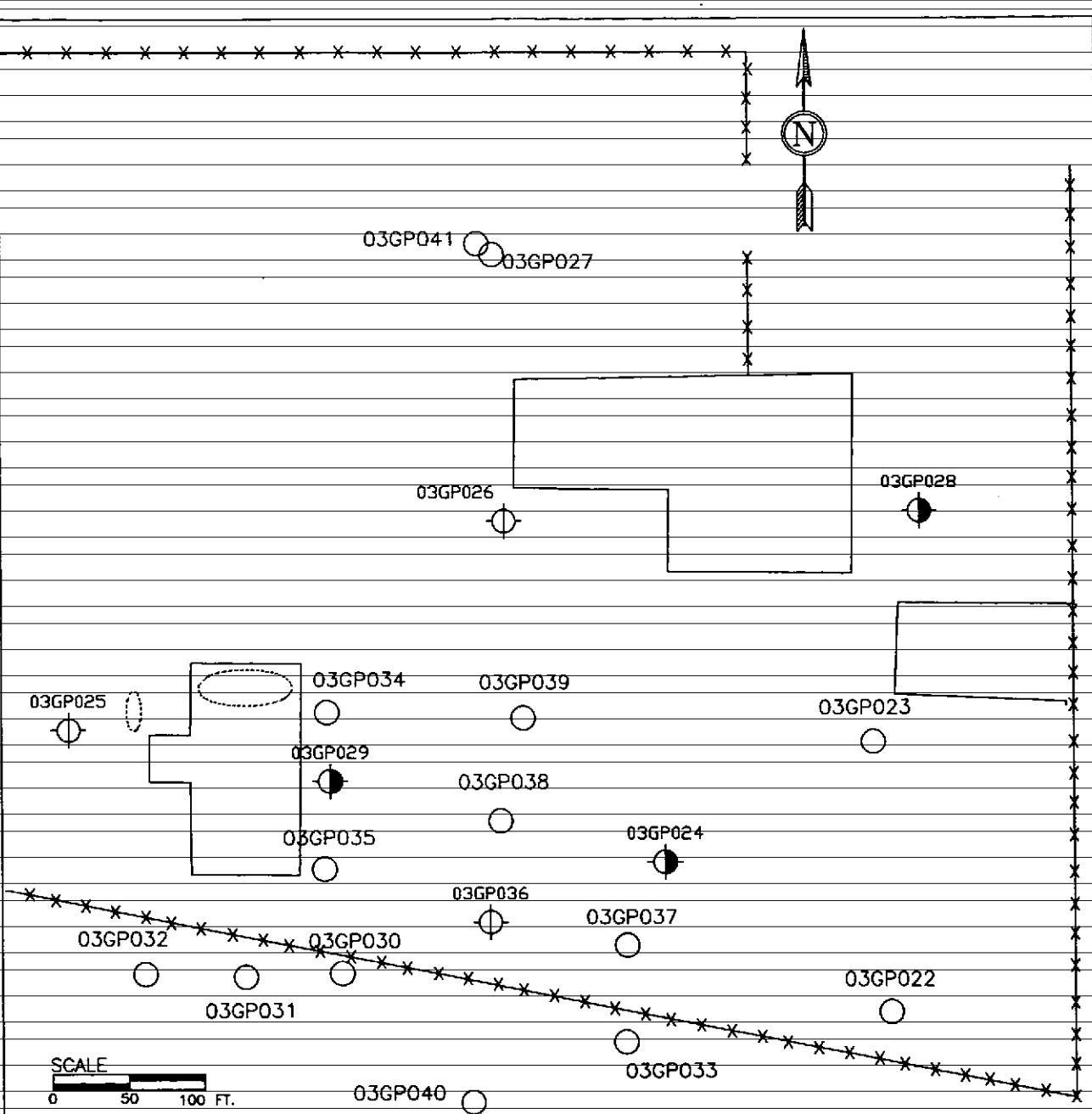
Harding Lawson Associates



**FIGURE 7**  
**PLANT 14 UST SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates





Legend

Red Coloring Indicates Concentrations  
above 1996 VRP Tier II Non-Residential  
Criteria in Soils

Blue Coloring indicates Concentrations  
above 1996 VRP Tier II Non-Residential  
Criteria in Groundwater

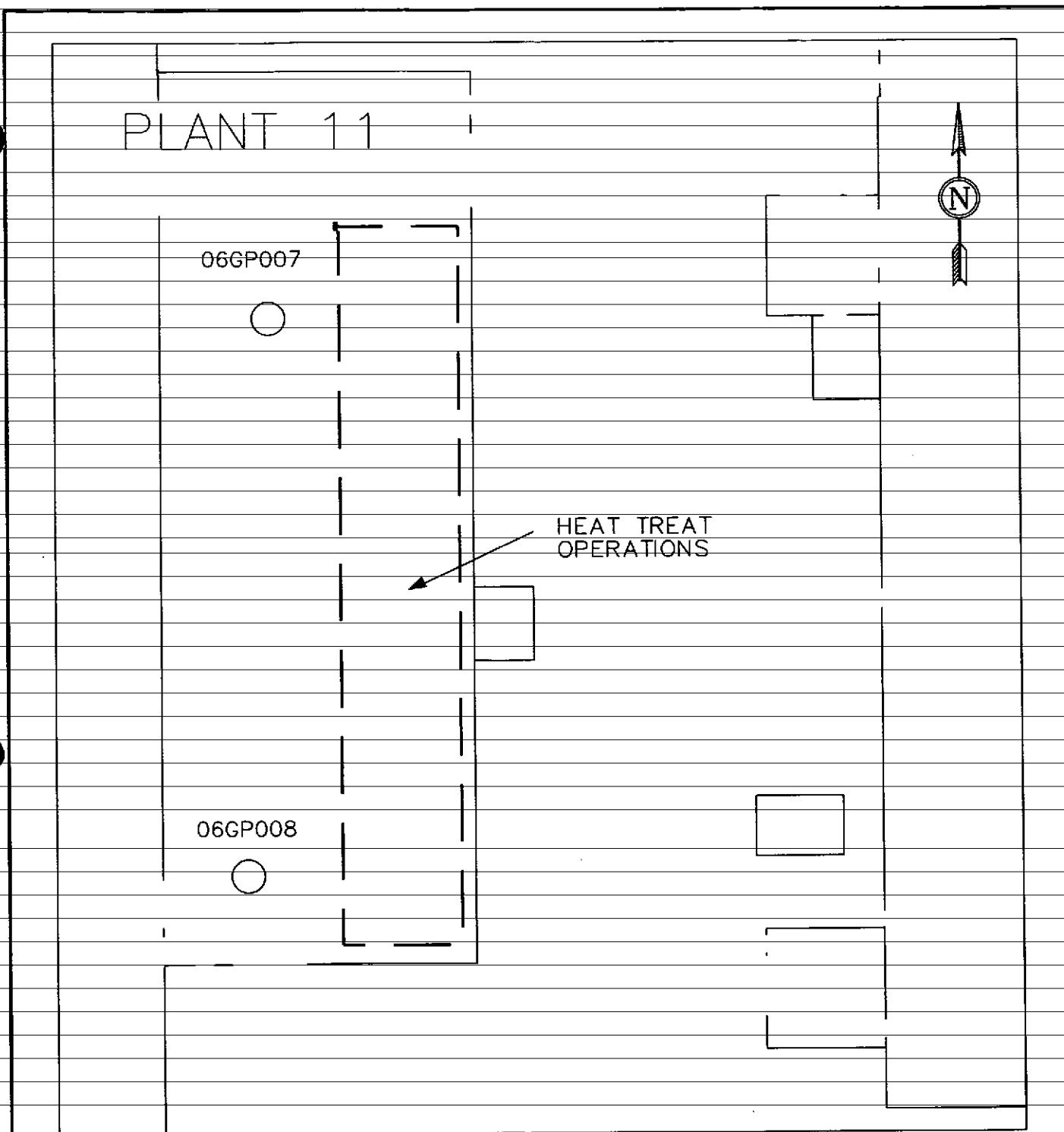
(●) Geoprobe Soil and Groundwater  
Sampling Location

(○) Geoprobe Soil Sampling  
Location

(□) Former Underground Storage  
Tank Location

**FIGURE 9**  
**TRANSPORTATION AREA**  
**UST SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

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SCALE

0 25 50 FT.

Legend

Red Coloring indicates Concentrations above 1996 VRP Tier II Non-Residential Criteria in Soils

Blue Coloring indicates Concentrations above 1996 VPR Tier II Non-Residential Criteria in Groundwater

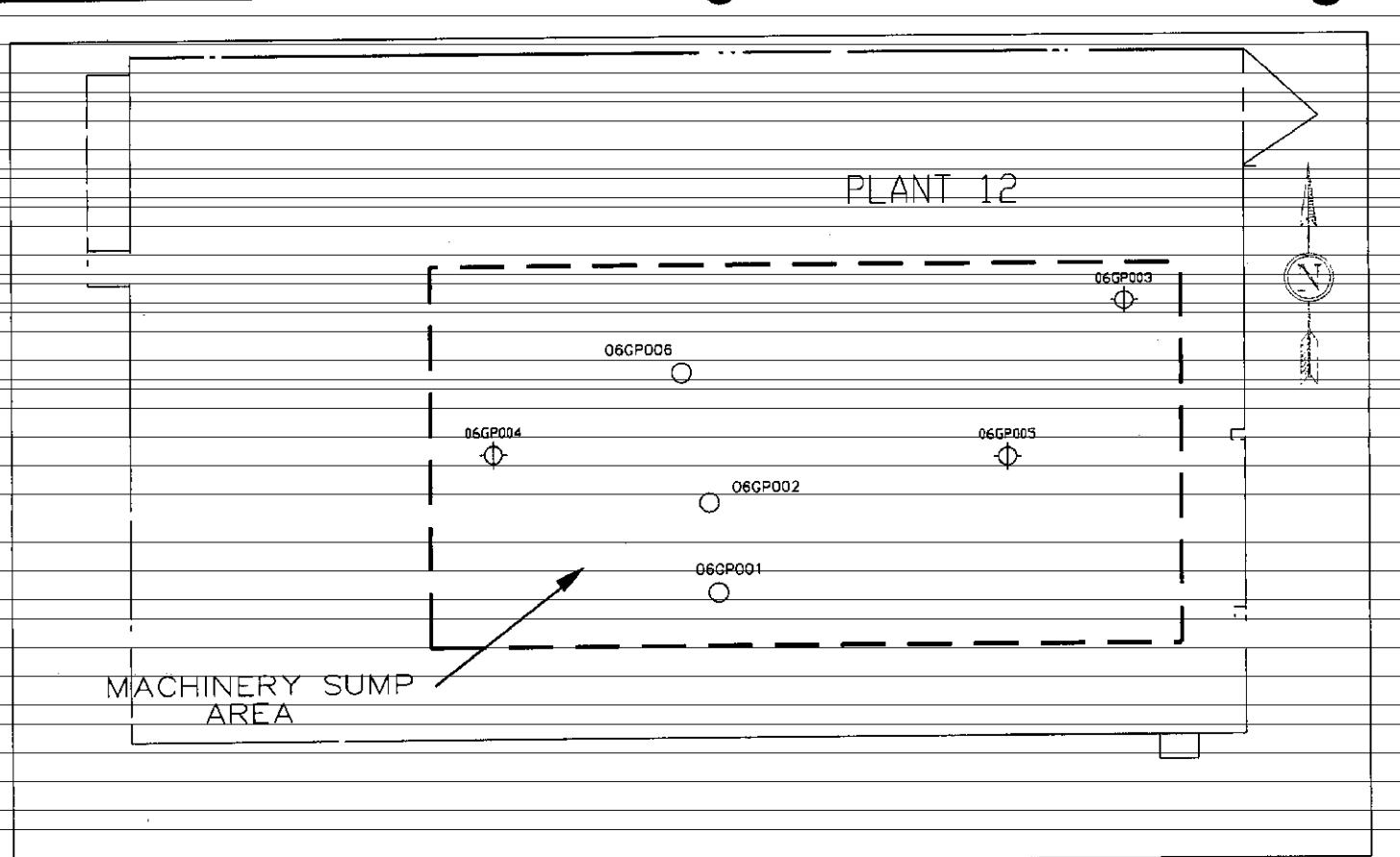


Geoprobe Soil Sampling Location

**FIGURE 10  
PLANT 11**

**HEAT TREATING SAMPLING LOCATIONS  
VOLUNTARY SITE INVESTIGATION  
ALLIEDSIGNAL INDUSTRIAL COMPLEX  
SOUTH BEND, INDIANA**

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**Legend**

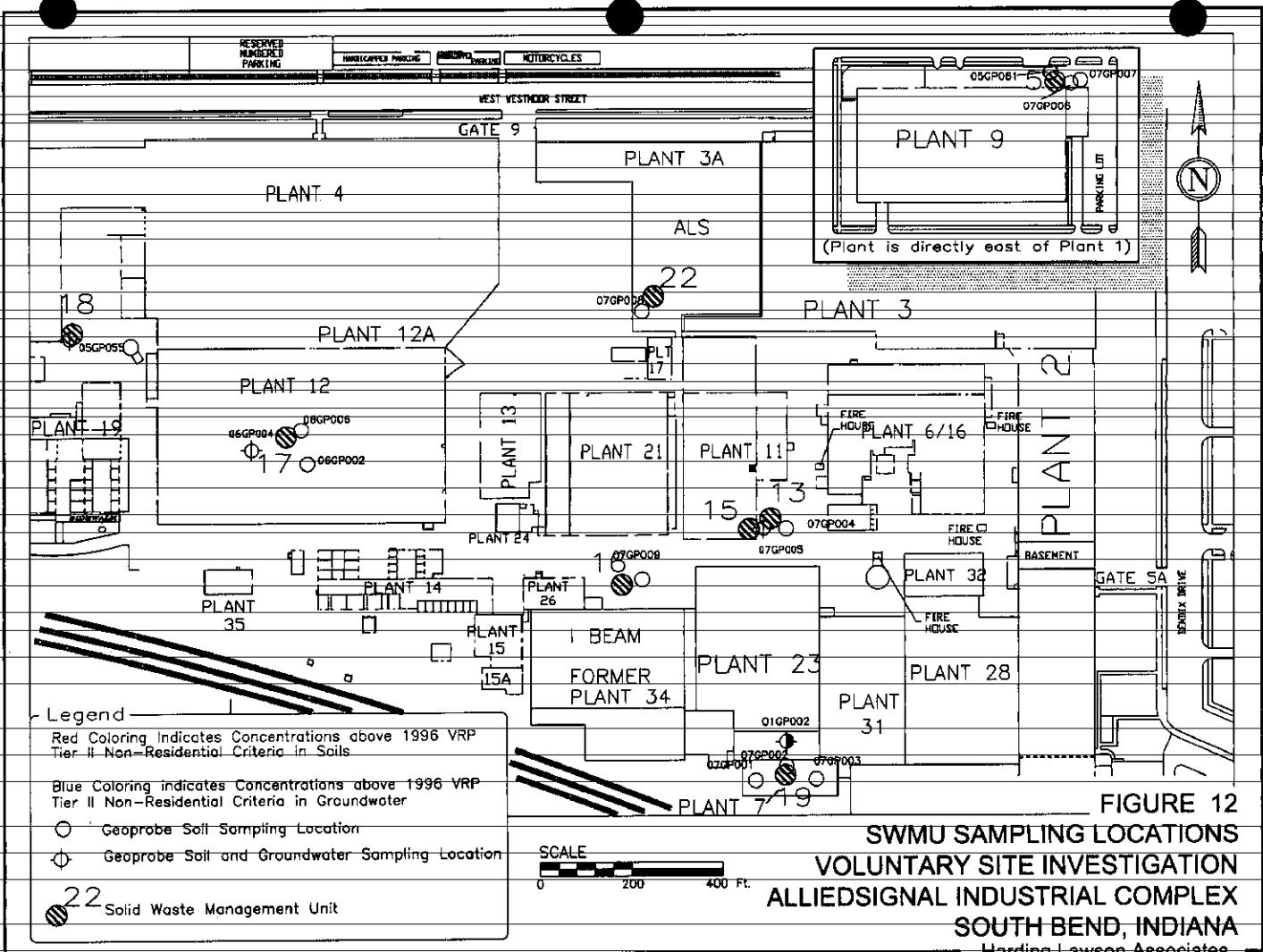
Red Coloring Indicates Concentrations above 1996 VRP  
Tier II Non-Residential Criteria in Soils  
Blue Coloring indicates Concentrations above 1996 VRP  
Tier II Non-Residential Criteria in Groundwater

○	Geoprobe Soil Sampling Location
◊	Geoprobe Soil and Groundwater Sampling Location

SCALE  
0 25 50 100 FT.

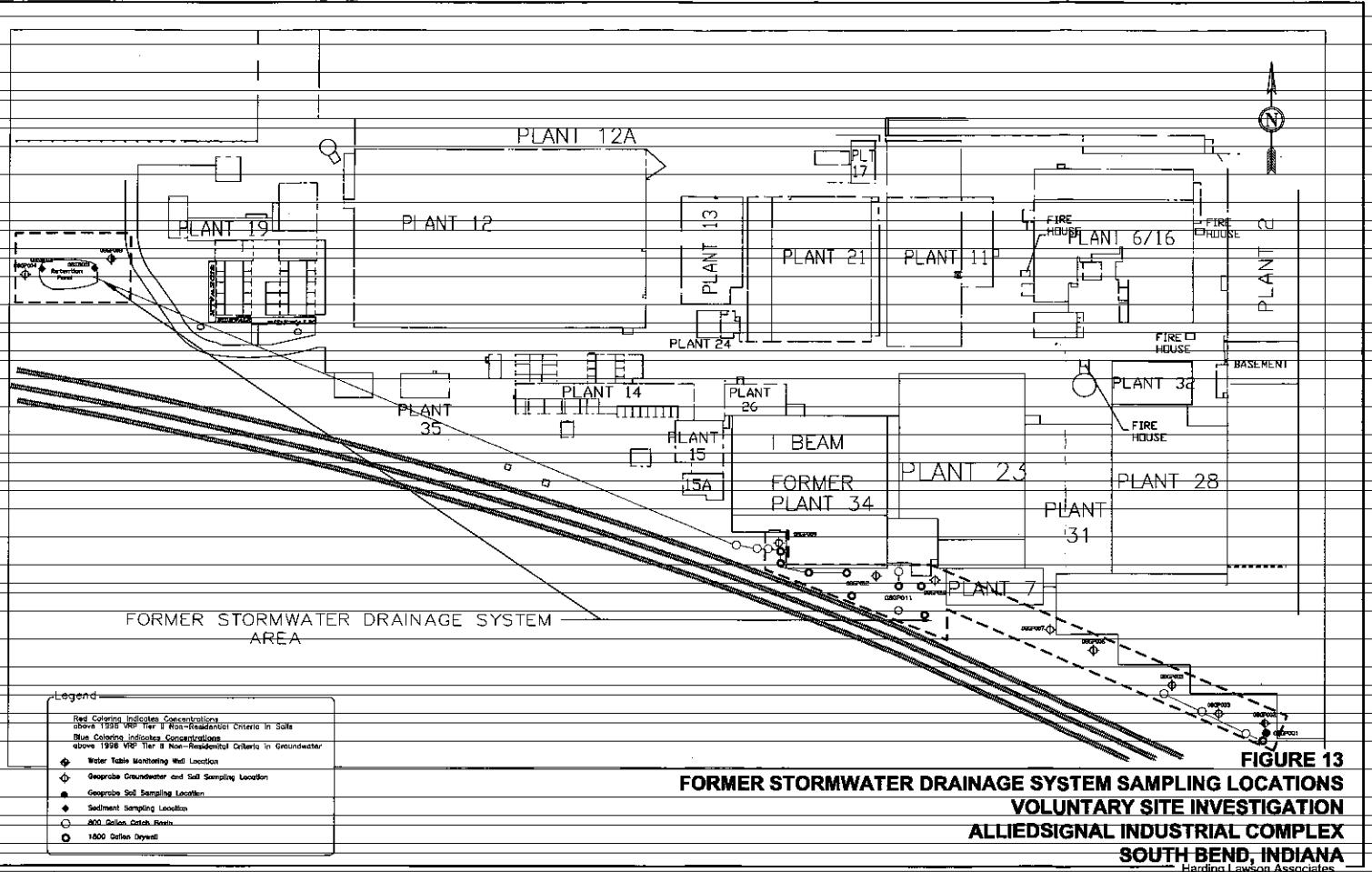
**FIGURE 11**  
**PLANT 12 MACHINERY SUMPS SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates



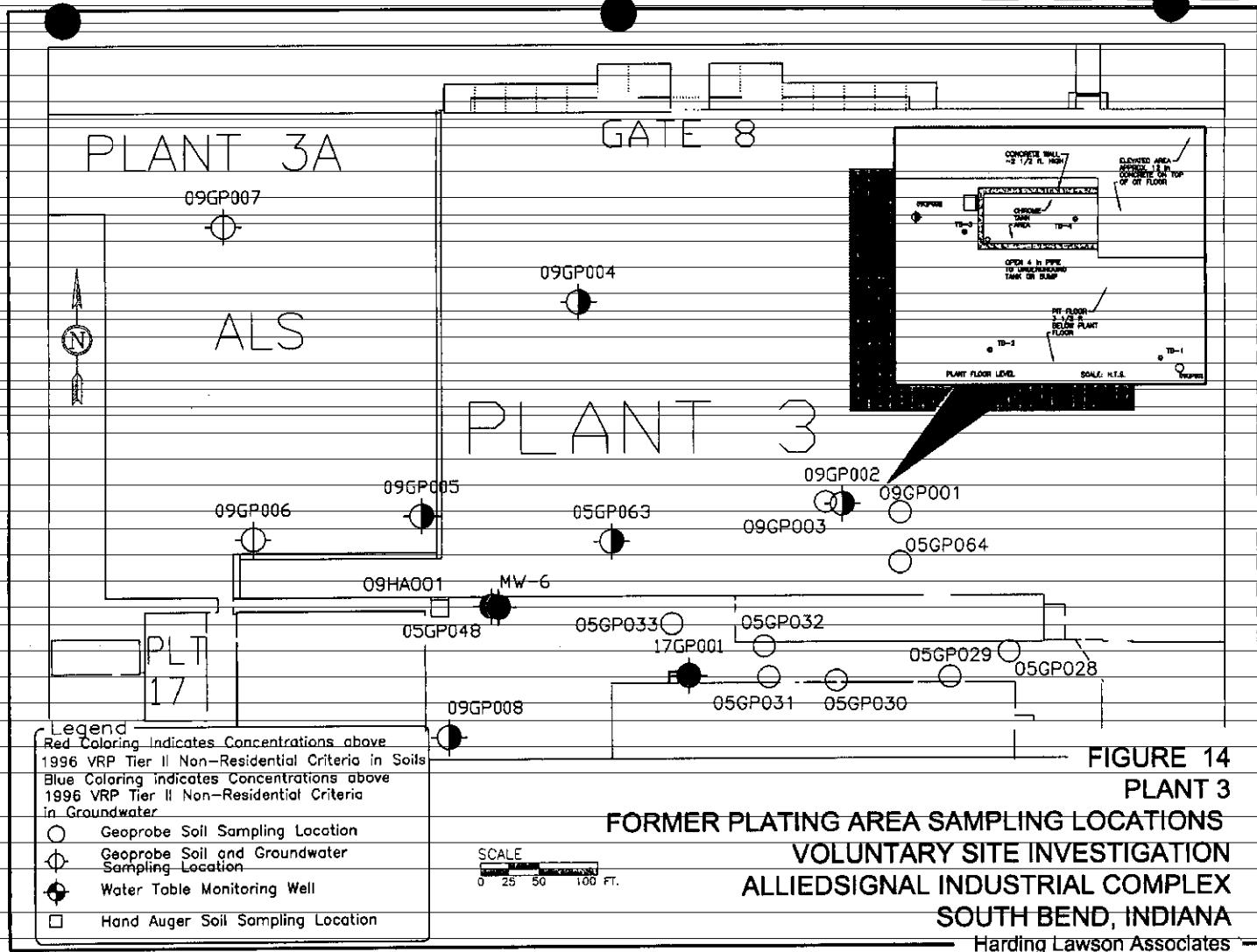
**FIGURE 12**  
**SWMU SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**  
Harding Lawson Associates

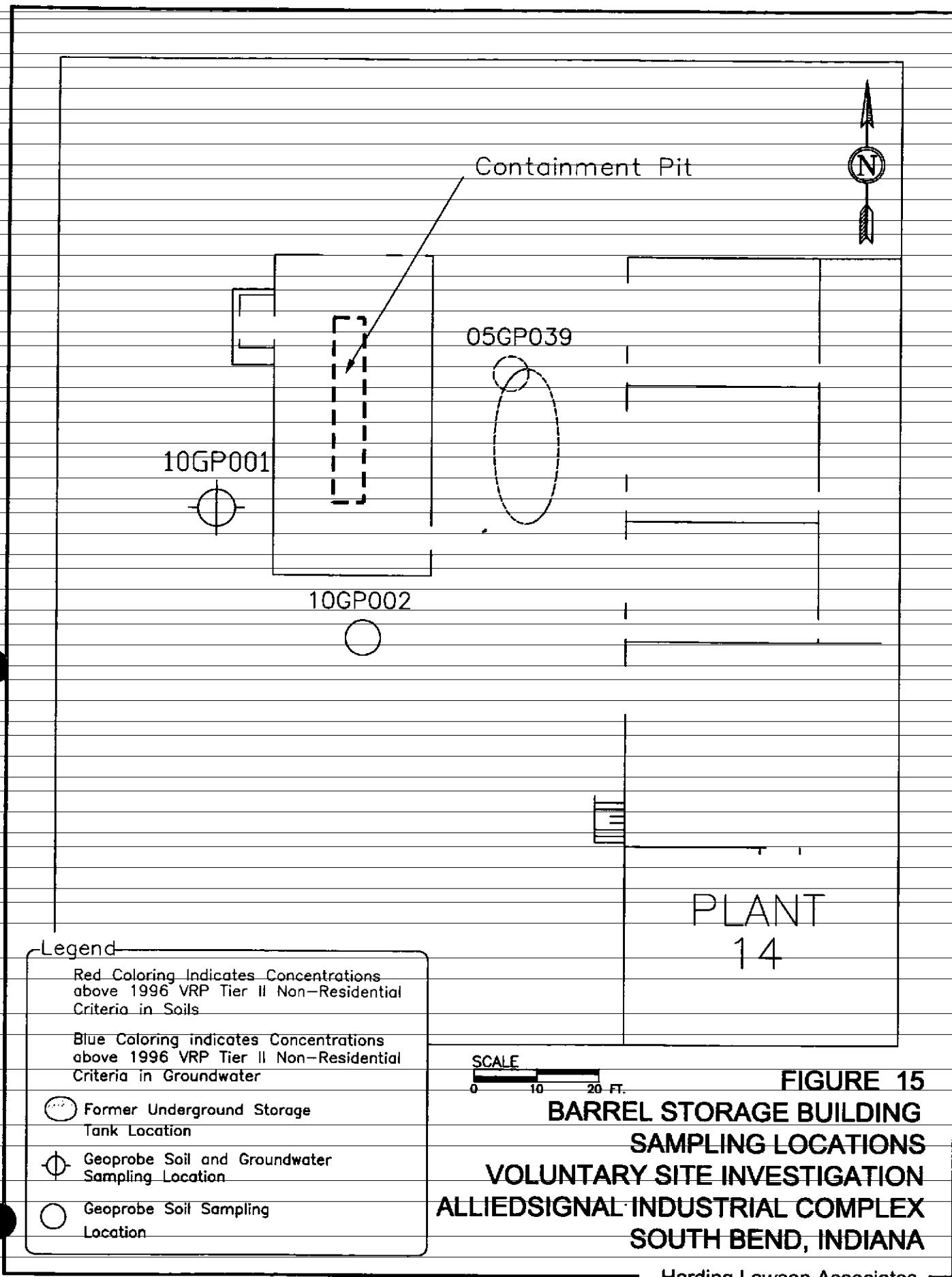
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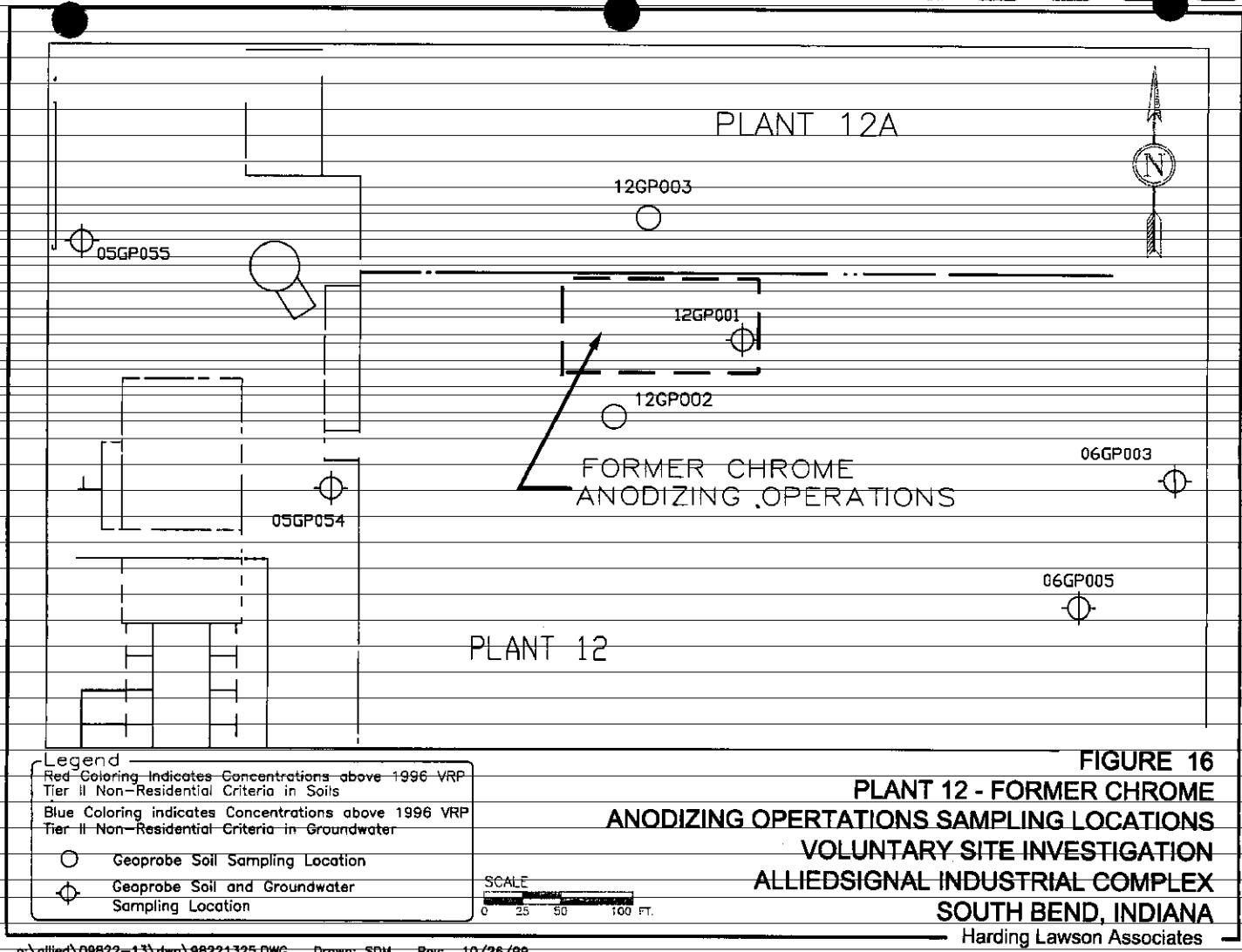
**FIGURE 13**

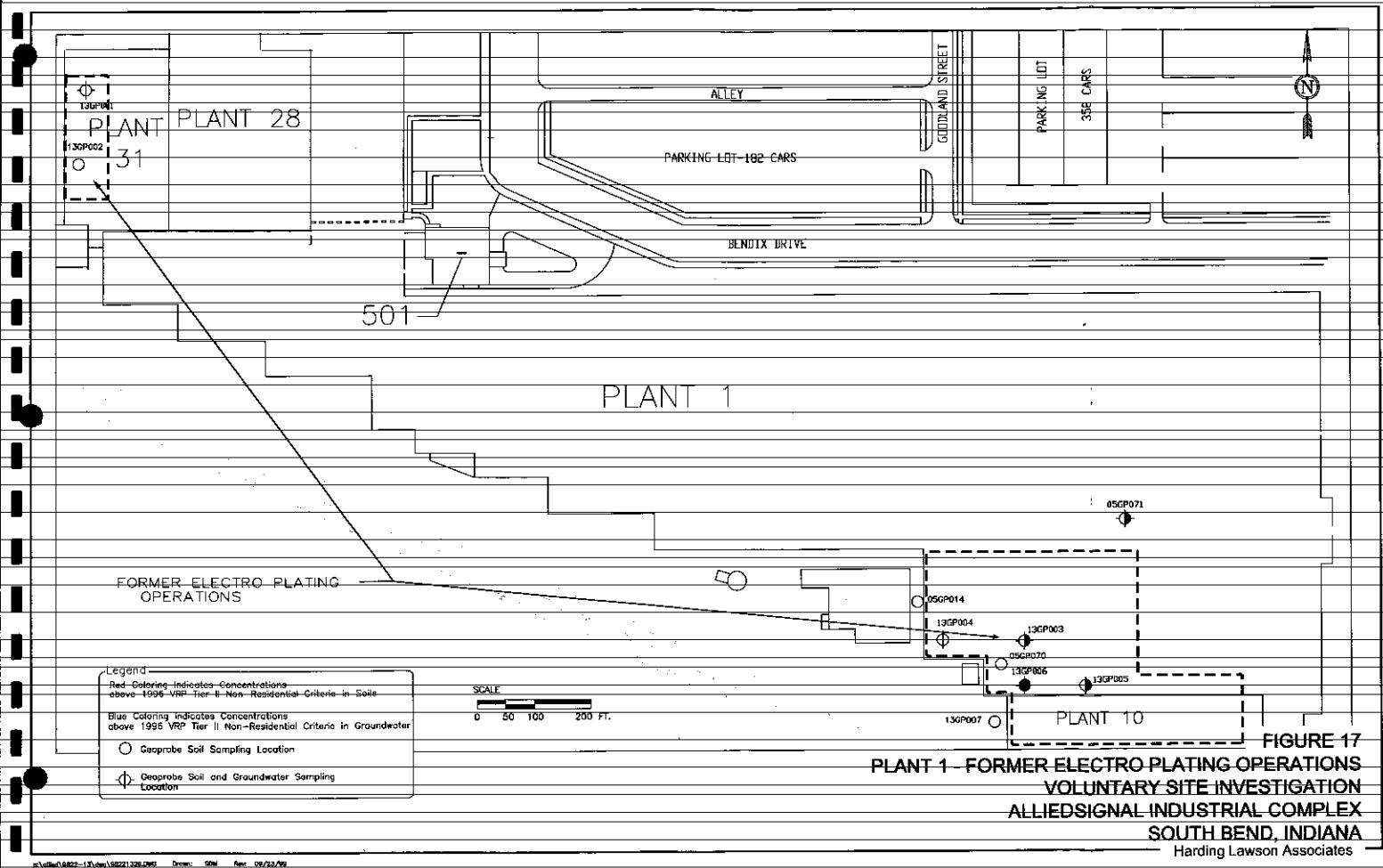
**FORMER STORMWATER DRAINAGE SYSTEM SAMPLING LOCATIONS  
VOLUNTARY SITE INVESTIGATION  
ALLIEDSIGNAL INDUSTRIAL COMPLEX  
SOUTH BEND, INDIANA**



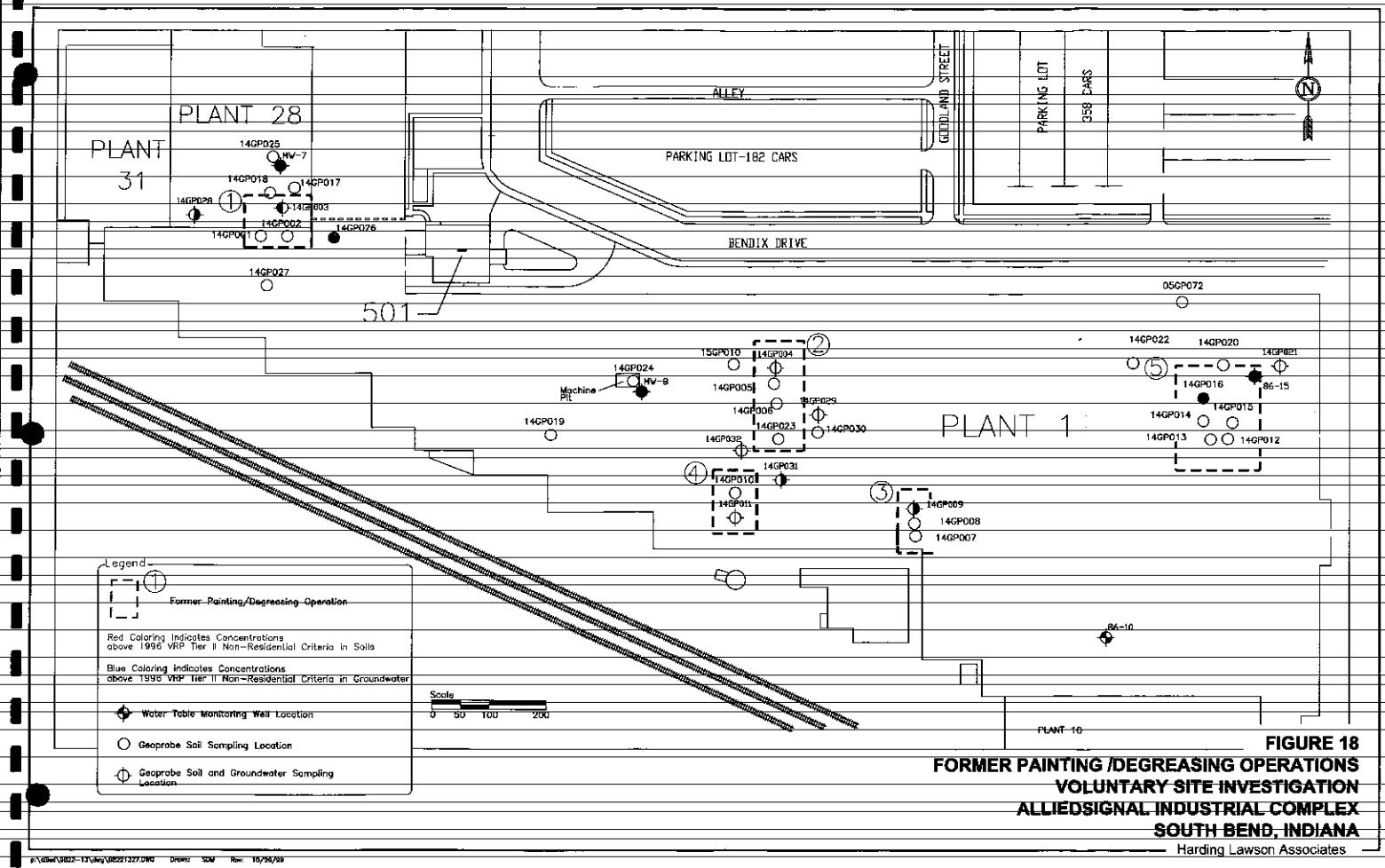


**FIGURE 15**  
**BARREL STORAGE BUILDING**  
**SAMPLING LOCATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**



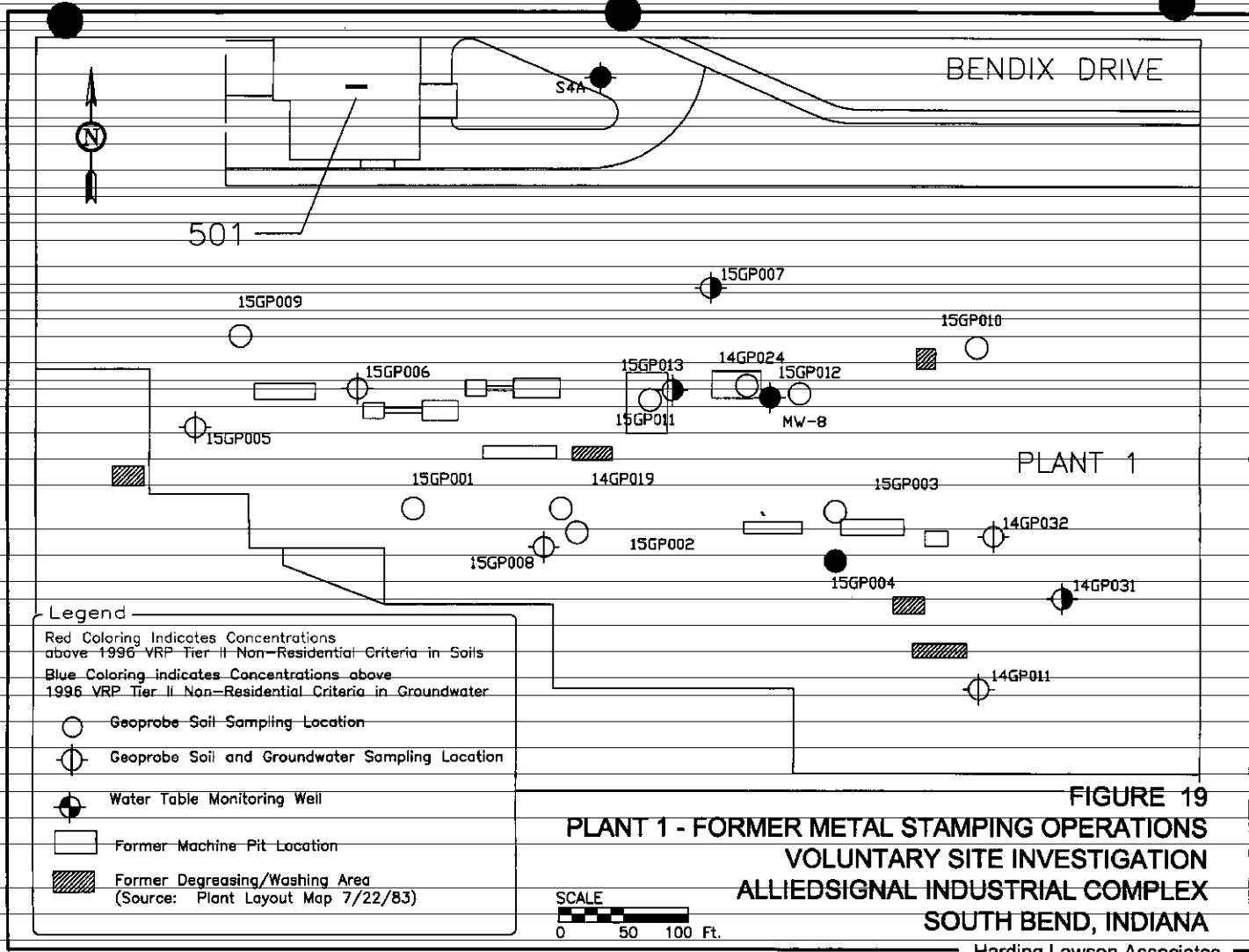


**FIGURE 17**  
**PLANT 1 - FORMER ELECTRO PLATING OPERATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**  
 Harding Lawson Associates



**FIGURE 18**  
**FORMER PAINTING /DEGREASING OPERATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates

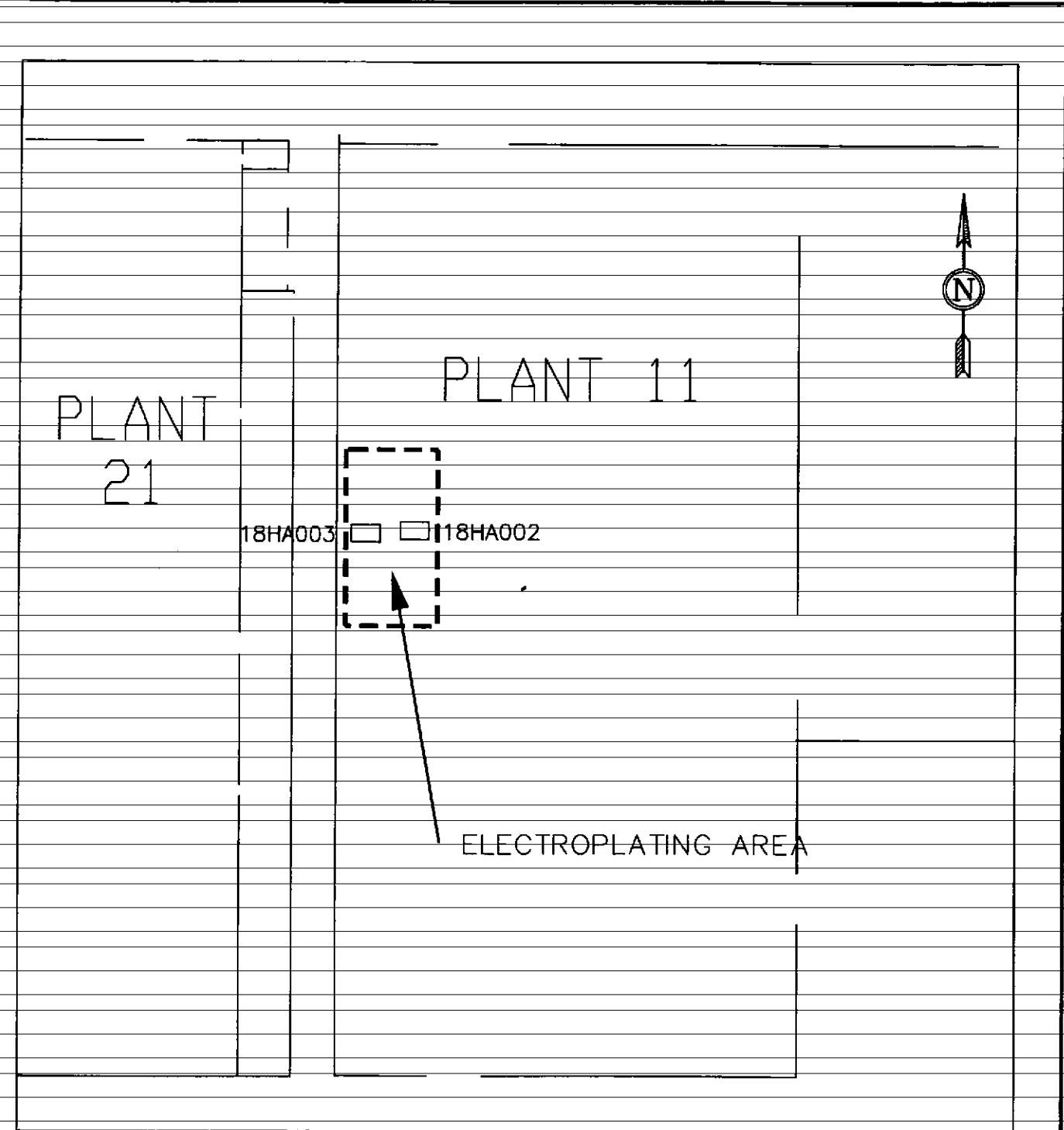


**FIGURE 19**  
**PLANT 1 - FORMER METAL STAMPING OPERATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

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Drawn: SDM Rev. 10/26/99



#### Legend

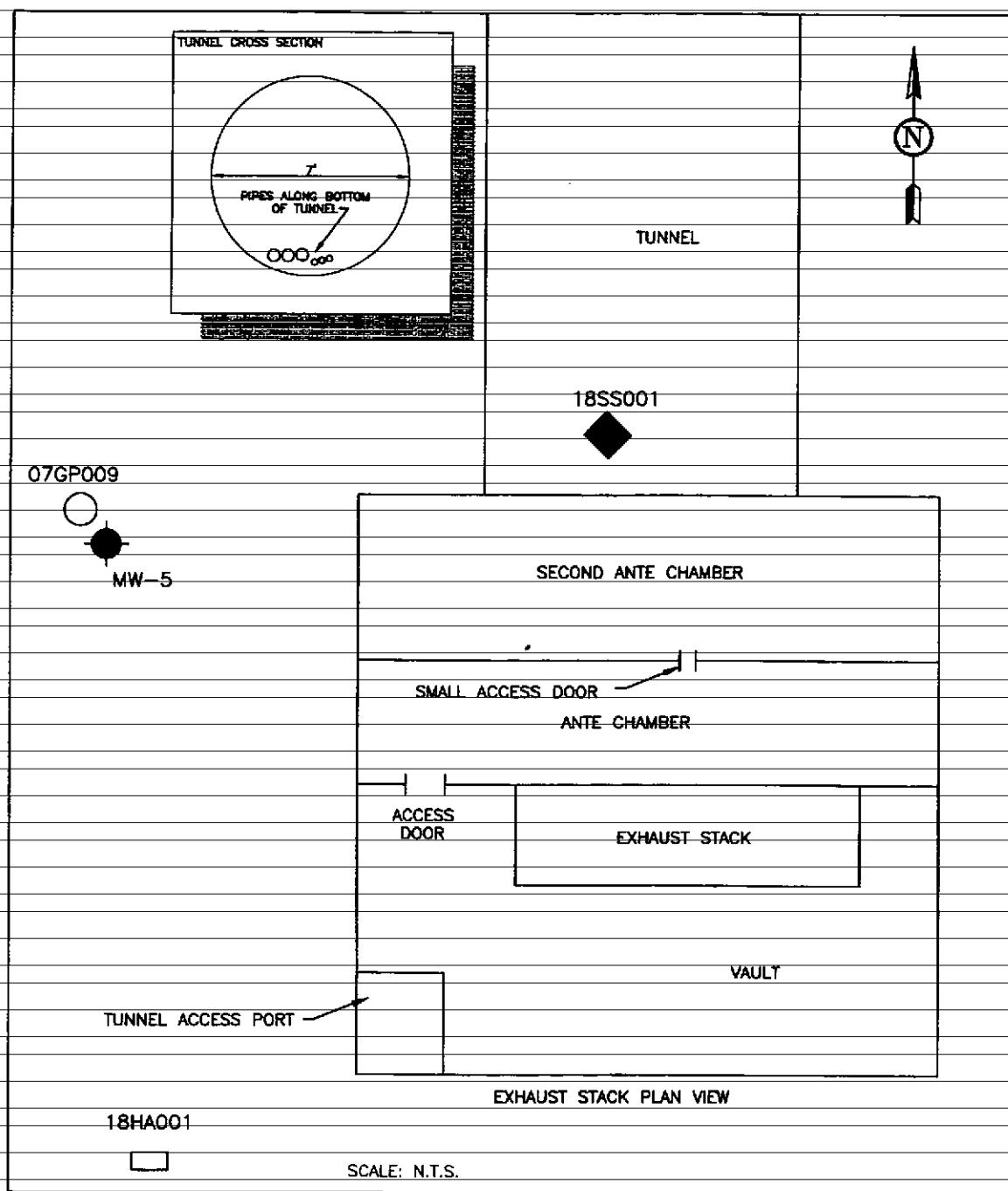
Red Coloring Indicates Concentrations  
1996 VRP Tier II Non-Residential  
Criteria in Soils

Blue Coloring indicates Concentrations  
1996 VRP Tier II Non-Residential  
in Groundwater

Hand Auger Soil Sampling  
Location

SCALE  
0 25 50 FT.

**FIGURE 20**  
**PLANT 11 - ELECTROPLATING OPERATIONS**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**



**Legend**

Red Coloring Indicates Concentrations  
1996 VRP Tier II Non-Residential  
Criteria in Soils

Blue Coloring indicates Concentrations  
1996 VRP Tier II Non-Residential  
Criteria in Groundwater

● Water Table Monitoring Well

○ Geoprobe Soil Sampling Location

◆ Scrape Sample Location

□ Hand Auger Soil Sampling Location

**FIGURE 21**  
**CHROMIUM EXHAUST SYSTEM**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates



**Legend**

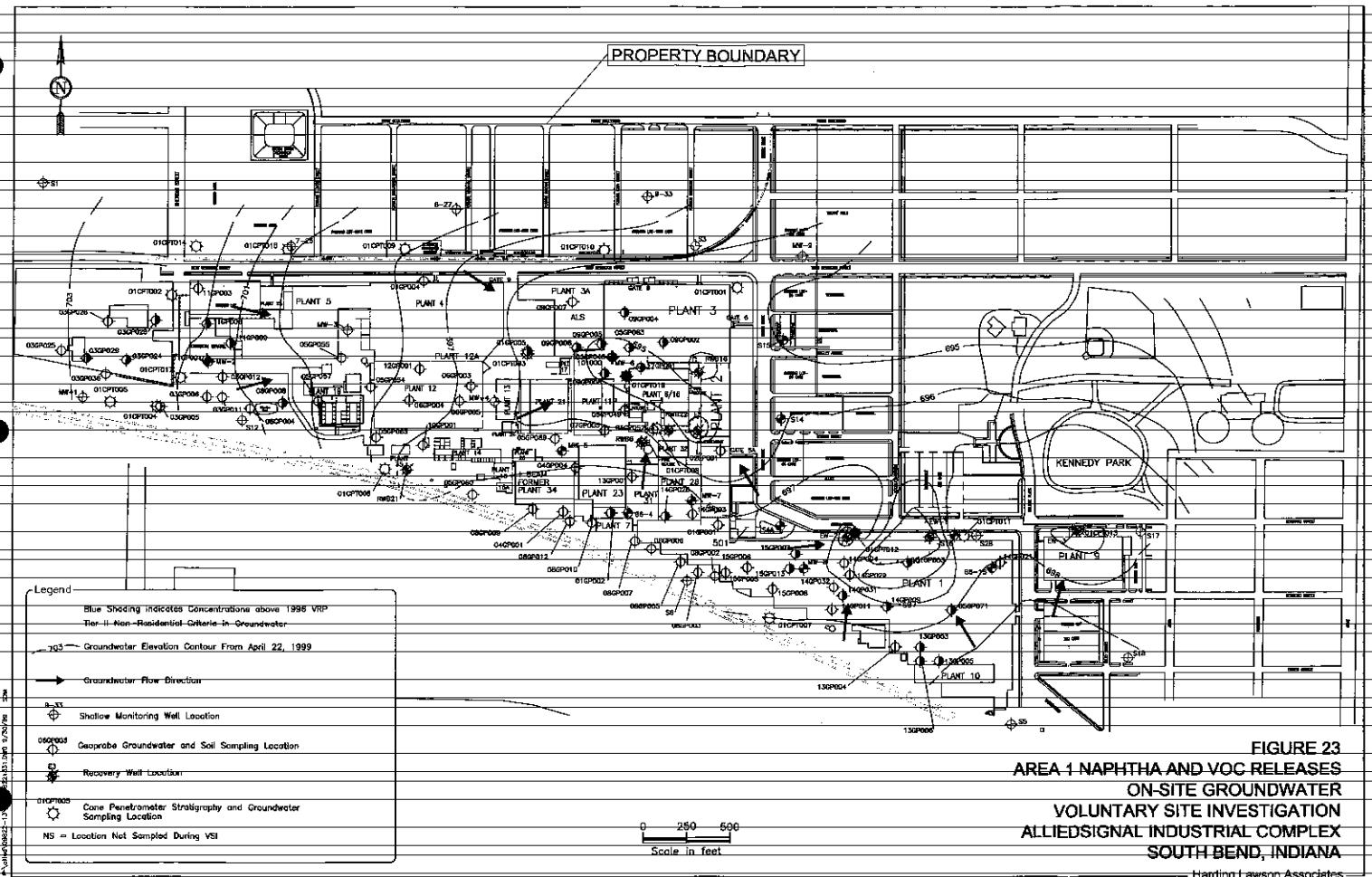
○ Geoprobe Boring

Red Coloring Indicates Concentrations  
above 1996 VRP Non-Residential  
Criteria for Soils

SCALE  
0 5 10 15 20 25 30 FT.

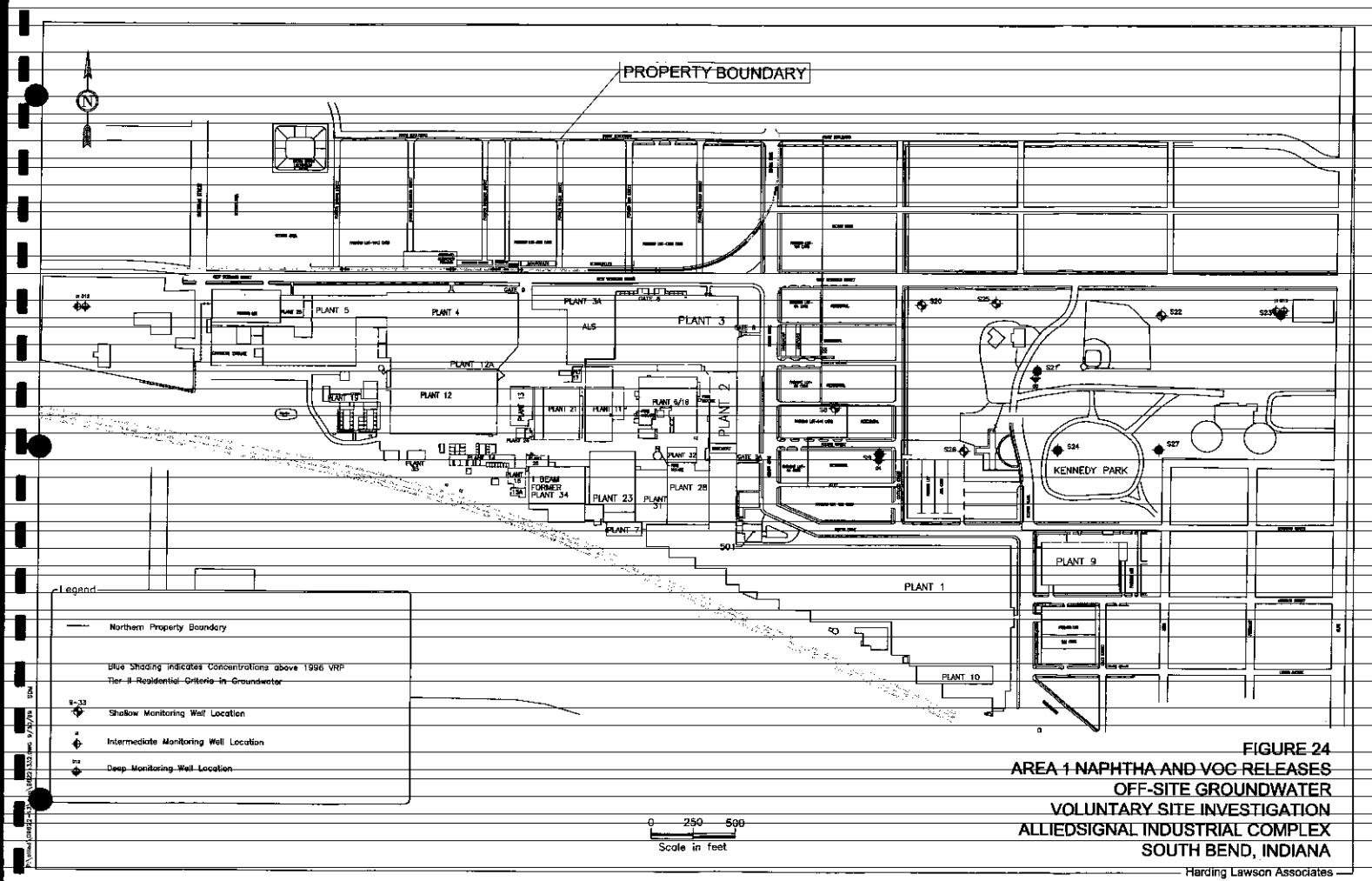
**FIGURE 22**  
**PLANT 4 - TORQUE TUBE AREA**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

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**FIGURE 23**  
**AREA 1 NAPHTHA AND VOC RELEASES**  
**ON-SITE GROUNDWATER**  
**VOLUNTARY SITE INVESTIGATION**  
**ALLIEDSIGNAL INDUSTRIAL COMPLEX**  
**SOUTH BEND, INDIANA**

Harding Lawson Associates



**DEVELOPMENT OF TIER II CLEANUP GOALS**

# TECHNICAL MEMORANDUM

**SUBJECT:** Development of Tier II Cleanup Goals for Non-Residential Subsurface Soil, Non-Residential Groundwater, and Residential Groundwater

**PROJECT:** AlliedSignal Industrial Complex, South Bend, Indiana

**PREPARED BY:** Jay Peters and Don Walsh, Harding Lawson Associates (HLA)

**DATE:** October 12, 1999

## INTRODUCTION

The AlliedSignal Industrial Complex in South Bend, Indiana is completing environmental activities under the Indiana Department of Environmental Management's (IDEM's) Voluntary Remediation Program (VRP). As one of the first steps in the VRP process, soil and groundwater analytical results are being compared to the Tier II cleanup goals published in the IDEM VRP Resource Guide (IDEM, 1996). Criteria are not published in the Resource Guide for certain constituents detected at the site. This technical memorandum documents the calculation of Tier II cleanup goals for those constituents where criteria are not published in the Resource Guide.

## METHODS

Tier II cleanup goals were developed for non-residential subsurface soil, non-residential groundwater, and residential groundwater using the algorithms and default values presented in the IDEM VRP Resource Guide. The methods used to calculate the cleanup goals are discussed below.

### **Tier II Cleanup Goals for Non-Residential Subsurface Soil**

In accordance with IDEM (1996) guidance, the Tier II cleanup goals for non-residential subsurface soil are based on the lowest of the following values:

- Health-based value for direct soil contact; protective for cancerous effects at an excess lifetime cancer risk of 1 in 100,000
- Health-based value for direct soil contact; protective for non-cancerous effects at a hazard index of 1
- Leaching-based value; protective for groundwater quality consistent with non-residential groundwater
- 1,000 mg/kg for VOCs



## TECHNICAL MEMORANDUM

- 10,000 mg/kg for SVOCs

As shown in Table 1, health-based Tier II cleanup goals were calculated for five VOCs, eight SVOCs, two PCB congeners, chromium, and lead.

The health-based values were calculated using IDEM default inputs and algorithms for non-residential subsurface soil (IDEM, 1996). The values are based on the assumption that a construction or excavation worker contacts the soil 5 days per week, 35 weeks per year, over a two-year period. The exposure routes included in the cleanup goals development are incidental soil ingestion, dermal contact, particulate inhalation, and volatile inhalation. The chemical-specific parameters required for calculation of cleanup goals included dose-response values and volatilization factors (Table 1).

Dose-response values include cancer slope factors and non-cancer reference doses. In accordance with IDEM guidance (IDEM, 1996), dose-response values were obtained from the most recent update of the USEPA Integrated Risk Information System (IRIS; USEPA, 1999). When values were not available in IRIS, values published in the USEPA Health Effects Assessment Summary Tables (HEAST; USEPA, 1997) were used. Provisional dose-response values published by the National Center for Environmental Assessment (NCEA) were used when values were not available in IRIS or HEAST.

As shown in Table 1, separate Tier II cleanup goals were calculated for chromium III and chromium VI, because chromium VI is considered more toxic than chromium III. Also, there are no published dose-response values for lead. As a result, the selected Tier II cleanup goal is based on the residential soil lead screening value published by USEPA's Office of Solid Waste and Emergency Response (OSWER; USEPA, 1994).

Volatilization factors for volatile chemicals were calculated using the default parameters and algorithms published by IDEM (IDEM, 1996). Chemical-specific inputs for calculation of the volatilization factor included air diffusivity, Henry's law constant, and oil-water partition coefficient. Values for these parameters were obtained from the USEPA Soil Screening Level Guidance (USEPA, 1996). Volatilization factor calculations are presented in Table 2.

Per IDEM guidance (IDEM, 1996), leaching-based values were included in the selection of Tier II cleanup goals to consider soil concentrations that are protective of groundwater quality. Leaching-based values were calculated using the algorithms published in IDEM guidance (IDEM, 1996), and are documented in Table 3. Chemical-specific parameters required for the calculation included aqueous solubility and target groundwater concentration. Aqueous solubility values were obtained from the USEPA Soil Screening Level Guidance (USEPA, 1996). Because the leaching model used in the Tier II calculation is applicable to groundwater directly beneath the soil source, as opposed to groundwater at a distant downgradient point, the appropriate target groundwater concentration was the Tier II non-residential groundwater cleanup goal (see Table 4).

### Tier II Cleanup Goals for Non-Residential Groundwater

In accordance with IDEM (1996) guidance, the Tier II cleanup goals for non-residential groundwater are based on the lowest of the following values:

- Health-based value for direct groundwater contact; protective for cancerous effects at an excess lifetime cancer risk of 1 in 100,000
- Health-based value for direct groundwater contact; protective for non-cancerous effects at a hazard index of 1

As shown in Table 4, health-based Tier II cleanup goals were calculated for 11 VOCs, 12 SVOCs, two PCB congeners, chromium, and lead.

The health-based values were calculated using IDEM default inputs and algorithms for non-residential groundwater (IDEM, 1996). These values are based on the assumption that a worker drinks the water 5 days per week, 50 weeks per year, over a 25-year period. For the AlliedSignal Industrial Complex, this is a very conservative assumption since groundwater is not used as a drinking water source or as an industrial water supply, and the site-closure strategy will include a groundwater use restriction.

The chemical-specific parameters required for calculation of groundwater health-based cleanup goals included dose-response values (Table 4). Dose-response values were obtained from the same sources used for development of Tier II soil values.

**Tier II Cleanup Goals for Residential Groundwater**

In accordance with IDEM (1996) guidance, the Tier II values for residential groundwater are based on the lowest of the following values:

- Health-based value for direct groundwater contact; protective for cancerous effects at an excess lifetime cancer risk of 1 in 100,000
- Health-based value for direct groundwater contact; protective for non-cancerous effects at a hazard index of 1
- If either of these health-based values was higher than the federal Maximum Contaminant Limit (MCL), the MCL was used as the Tier II cleanup goal.

As shown in Table 5, health-based Tier II cleanup goals were calculated for nine VOCs, five SVOCs, chromium, and lead.

The health-based values were calculated using IDEM default inputs and algorithms for residential groundwater (IDEM, 1996). These values are based on the assumption that a resident drinks the water and inhales volatile chemicals released from the water during bathing 7 days per week, 50 weeks per year, over a 30-year period. For the AlliedSignal Industrial Complex, this is a conservative assumption considering that off-site groundwater in the vicinity of the site is not used as a drinking water source (i.e., the area is serviced by municipal water supplies). Additionally, an existing St. Joseph County Health Department Well Drilling and Water Supply Systems Ordinance would likely prohibit the installation of water supply wells in the future.

The chemical-specific parameters required for calculation of groundwater health-based cleanup goals included dose-response values and MCLs (Table 5). Dose-response values were obtained from the same sources used for development of Tier II soil values. MCLs were obtained from "Drinking Water Regulations and Health Advisories" (USEPA, 1996).



# TECHNICAL MEMORANDUM

## REFERENCES

- Indiana Department of Environmental Management (IDEM), 1996. Voluntary Remediation Program: Resource Guide. Indiana Department of Environmental Management, Office of Environmental Response. July.
- USEPA, 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12.
- USEPA, 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response. EPA/540/R-95/128. May.
- USEPA, 1997. Health Effects Assessment Summary Tables (HEAST), Annual Update: Office of Solid Waste and Emergency Response, EPA 540/R/97/036, PB97-921199
- USEPA, 1998. Drinking Water Regulations and Health Advisories. Office of Water. EPA822-B-96-002. October.
- U.S. Environmental Protection Agency (USEPA), 1999. "Integrated Risk Information System (IRIS)"; on-line data-base search; September.

**TABLE 1**  
**HEALTH-BASED TIER II VALUES - NON-RESIDENTIAL SUBSURFACE SOIL**  
**AlliedSignal Industrial Complex, South Bend, Indiana**

Tier II Values based on Carcinogenic Effects															
Chemical	SF <sub>o</sub> (mg/kg/day)	Source	SF <sub>i</sub> (mg/kg/day)	Source	RfDo (mg/kg/day)	Source	RfDI (mg/kg/day)	Source	VF [f] (mg/kg)	C <sub>goal</sub> - Cancer (mg/kg)	C <sub>goal</sub> - Non-cancer (mg/kg)	Leaching to GW [d] (mg/kg)	Ceiling Conc. (mg/kg)	Selected Tier II (mg/kg)	
VOCs					1.00E-01	IRIS	1.10E-01	IRIS	1.38E+04	NC	1.03E+04	2.86E+04	1.00E+03	1.00E+03	
Isopropylbenzene					1.00E-01	[a]	1.10E+01	[a]	1.38E+04	NC	1.03E+04	2.86E+04	1.00E+03	1.00E+03	
n-Propylbenzene					5.00E-02	NCEA	1.70E-03	NCEA	1.13E+04	NC	NA	9.84E+03	1.00E+03	1.00E+03	
1,3,5-Trimethylbenzene					2.00E-02	IRIS	5.70E-03	HEAST	7.87E+03	NC	3.16E+02	7.84E+02	1.00E+03	3.16E+02	
Chlorobenzene					7.50E-03	IRIS	1.65E-03	IRIS	8.60E-01	HEAST	1.72E+03	2.56E+03	9.05E+00	1.00E+03	9.05E+00
SVOCs					2.00E-02	IRIS	ND	IRIS	3.57E+05	NC	2.92E+04	1.70E+02	1.00E+04	1.70E+02	
2,4-Dimethylphenol					6.00E-02	IRIS	ND	IRIS	2.32E+05	NC	8.76E+04	5.41E+04	1.00E+04	1.00E+04	
Acenaphthene					3.00E-01	IRIS	ND	IRIS	8.83E+05	NC	4.38E+05	7.23E+08	1.00E+04	1.00E+04	
Anthracene					2.00E-02	HEAST	ND	ND	2.01E+07	2.55E+04	NA	NA	1.00E+04	1.00E+04	
Carbazole					7.30E-03	NCEA	ND	IRIS	3.48E+08	0.95E+04	NA	7.16E+04	1.00E+04	1.00E+04	
Chrysene					1.00E-01	IRIS	ND	IRIS	5.22E+07	NC	1.46E+05	6.74E+04	1.00E+04	1.00E+04	
Din-butylphthalate					4.00E-02	IRIS	ND	IRIS	4.88E+05	NC	5.84E+04	4.52E+04	1.00E+04	1.00E+04	
Fluorene					5.00E-02	[b]	ND	IRIS	6.87E+05	NC	4.36E+04	3.75E+04	1.00E+04	1.00E+04	
Phenanthrene					1.50E+00	IRIS	ND	IRIS	NA	NC	NA	NA	NA	NA	
PCBs					2.00E+00	IRIS	2.00E+00	IRIS	8.04E+05	2.09E+02	2.92E+01	1.28E+00	NA	1.28E+00	
Aroclor 1248					2.00E+00	IRIS	2.00E+00	IRIS	3.81E+06	2.42E+02	2.92E+01	3.05E+00	NA	3.05E+00	
Aroclor 1254					2.00E+00	IRIS	2.00E+00	IRIS	NA	NC	2.19E+05	NA	NA	2.19E+05	
Inorganics					4.10E+01	IRIS	3.00E-03	IRIS	2.89E+05	IRIS	2.89E+05	4.36E+03	NA	4.36E+03	
Chromium, total					ND	IRIS	ND	ND	NA	NC	NA	NA	NA	NA	
Chromium (III)					ND	IRIS	ND	IRIS	NA	NC	2.19E+05	NA	NA	2.19E+05	
Chromium (VI)					ND	IRIS	ND	IRIS	NA	NC	NA	NA	NA	NA	
Lead, total					ND	IRIS	ND	IRIS	NA	NC	NA	NA	NA	400 [a]	

**Notes:**

- [a] - Isopropylbenzene value used as surrogate.
- [b] - Pyrene value used as surrogate.
- [c] - Aroclor 1254 value used as surrogate.
- [d] - Based on leaching to Non-Residential Groundwater.
- [e] - Residential soil lead screening value. Office of Solid Waste and Emergency Response. Directive 9355.4-12. USEPA. 1994.
- [f] - See Table 2
- NA - Not Applicable/Available
- NC - Non-Carcinogenic

**TABLE 2**  
**CALCULATION OF SOIL VOLATILIZATION FACTOR**  
**AlliedSignal Industrial Complex, South Bend, Indiana**

<b>Site-Specific Parameters</b>							
Parameter	Value	Unit					
LS	45	m					
V	2.25	m/s					
DH	2	m					
A	20,250,000	cm <sup>2</sup>					
Dei	Di x E <sup>0.33</sup>	cm <sup>2</sup>					
E	0.35						
Ksa	H/Kd x 41	g soil/cm <sup>3</sup> air					
Kd	Koc x OC	cm <sup>3</sup> /g					
Ps	2.65	g/cm <sup>2</sup>					
T	7.95E+08	s					
<b>Chemical Specific Parameters</b>							
Chemical	Di (cm <sup>2</sup> /sec)	Dei cm <sup>3</sup>	H atm-m <sup>3</sup> -mol	Koc cm <sup>3</sup> /g	OC	$\alpha$	VF
<b>VOCs</b>							
Isopropylbenzene	6.77E-02	4.79E-02	1.50E-02	2.70E+03	0.02	1.11E-04	1.38E+04
n-Propylbenzene	6.77E-02	4.79E-02	1.50E-02	2.70E+03	0.02	1.11E-04	1.38E+04
1,3,5-Trimethylbenzene	6.63E-02	4.69E-02	5.57E-03	6.61E+02	0.02	1.64E-04	1.13E+04
Chlorobenzene	7.30E-02	5.16E-02	3.70E-03	2.24E+02	0.02	3.53E-04	7.67E+03
Methylene chloride	1.01E-01	7.14E-02	2.19E-03	1.00E+01	0.02	5.97E-03	1.72E+03
<b>SVOCs</b>							
2,4-Dimethylphenol	5.84E-02	4.13E-02	2.00E-06	2.09E+02	0.02	1.65E-07	3.57E+05
Acenaphthene	4.21E-02	2.98E-02	1.55E-04	4.90E+03	0.02	3.92E-07	2.32E+05
Anthracene	3.24E-02	2.29E-02	6.50E-05	2.35E+04	0.02	2.64E-08	8.93E+05
Carbazole	3.90E-02	2.76E-02	1.53E-08	3.39E+03	0.02	5.19E-11	2.01E+07
Chrysene	2.48E-02	1.75E-02	9.46E-05	3.98E+05	0.02	1.74E-09	3.48E+06
Di-n-butylphthalate	4.38E-02	3.10E-02	9.38E-10	1.57E+03	0.02	7.71E-12	5.22E+07
Fluorene	3.63E-02	2.57E-02	6.36E-05	7.71E+03	0.02	8.82E-08	4.88E+05
Phenanthrene	5.43E-02	3.84E-02	3.90E-05	1.40E+04	0.02	4.46E-08	6.87E+05
<b>PCBs</b>							
Aroclor 1248	5.50E-02	3.89E-02	4.40E-04	2.77E+05	0.02	2.57E-08	9.04E+05
Aroclor 1254	5.25E-02	3.71E-02	2.00E-04	2.14E+06	0.02	1.45E-09	3.81E+06
<b>Inorganics</b>							
Chromium, total	NA	NA	NA	NA	NA	NA	NA
Chromium (III)	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	NA	NA	NA	NA	NA	NA	NA
Lead, total	NA	NA	NA	NA	NA	NA	NA

**Notes:**

NA - Not Applicable/Available

**TABLE 3**  
**CALCULATION OF SOIL LEACHING VALUE**  
**AlliedSignal Industrial Complex, South Bend, Indiana**

$C_{soil} = (C_{gw}/(0.00221 \cdot Sol^{0.373}))^{(1/0.678)}$			
Chemical	Groundwater Cleanup Goal [a] (mg/L)	Aqueous Solubility (mg/L)	Target Soil Concentration (mg/Kg)
<b>VOCs</b>			
Isopropylbenzene	1.02E+01	5.00E+01	2.96E+04
n-Propylbenzene	1.02E+01	5.00E+01	2.96E+04
1,3,5-Trimethylbenzene	5.11E+00	5.76E+01	9.84E+03
Chlorobenzene	2.04E+00	4.91E+02	7.84E+02
Methylene chloride	3.81E-01	1.80E+04	9.08E+00
<b>SVOCs</b>			
2,4-Dimethylphenol	2.04E+00	7.87E+03	1.70E+02
Acenaphthene	6.13E+00	4.24E+00	5.41E+04
Anthracene	3.07E+01	4.34E-02	7.23E+06
Carbazole	1.43E-01	NA	NA
Chrysene	3.92E-01	1.60E-03	7.16E+04
Di-n-butylphthalate	1.02E+01	1.12E+01	6.74E+04
Fluorene	4.09E+00	1.98E+00	4.52E+04
Phenanthrene	3.07E+00	1.29E+00	3.75E+04
<b>PCBs</b>			
Aroclor 1248	1.43E-03	2.00E-01	1.28E+00
Aroclor 1254	1.43E-03	4.10E-02	3.05E+00
<b>Inorganics</b>			
Chromium, total	NA	insoluble	NA
Chromium (III)	1.53E+02	insoluble	NA
Chromium (VI)	3.07E-01	insoluble	NA
Lead, total	1.50E-02	insoluble	NA

**Notes:**

[a] - Non-Residential Groundwater Tier II Values

NA - Not Applicable/Available

**TABLE 4**  
**HEALTH-BASED TIER II VALUES - NON-RESIDENTIAL GROUNDWATER**  
**AlliedSignal Industrial Complex, South Bend, Indiana**

Tier II Values based on Carcinogenic Effects							
Cgoal = <u>2.86E-03</u> SFo							
Tier II Values based on Non-Carcinogenic Effects							
Cgoal = <u>102.2 x RfDo</u>							
Chemical	SFo (mg/kg/day)	Source	RfDo (mg/kg/day)	Source	Cgoal - Cancer (mg/L)	Cgoal - Non-cancer (mg/L)	Selected Tier II (mg/L)
<b>VOCs</b>							
Isopropylbenzene			1.00E-01	IRIS	NC	1.02E+01	<b>1.02E+01</b>
n-Propylbenzene			1.00E-01	[b]	NC	1.02E+01	<b>1.02E+01</b>
2-Methylnaphthalene			2.00E-02	NCEA	NC	2.04E+00	<b>2.04E+00</b>
1,2,4-Trimethylbenzene			5.00E-02	NCEA	NC	5.11E+00	<b>5.11E+00</b>
1,3,5-Trimethylbenzene			5.00E-02	NCEA	NC	5.11E+00	<b>5.11E+00</b>
trans-1,2-Dichloroethene			2.00E-02	IRIS	NC	2.04E+00	<b>2.04E+00</b>
1,2-dichloropropane	6.80E-02	IRIS	ND		4.21E-02	NA	<b>4.21E-02</b>
methyl-t-butyl ether							<b>6.95E+00 [d]</b>
Chlorobenzene			2.00E-02	IRIS	NC	2.04E+00	<b>2.04E+00</b>
Chloroethane	2.80E-03	NCEA	4.00E-01	NCEA	9.88E-01	4.08E+01	<b>9.88E-01</b>
Methylene chloride	7.50E-03	IRIS	8.00E-02	IRIS	3.81E-01	6.13E+00	<b>3.81E-01</b>
<b>SVOCs</b>							
Benz(a,h)perylene			3.00E-02	[b]	NC	3.07E+00	<b>3.07E+00</b>
1,2-Dichlorobenzene			9.00E-02	NCEA	NC	9.20E+00	<b>9.20E+00</b>
1,3-Dichlorobenzene			9.00E-04	NCEA	NC	9.20E-02	<b>9.20E-02</b>
1,4-Dichlorobenzene	2.40E-02	HEAST	3.00E-02	HEAST	1.19E-01	3.07E+00	<b>1.19E-01</b>
2,4-Dimethylphenol			2.00E-02	IRIS	NC	2.04E+00	<b>2.04E+00</b>
Acenaphthene			8.00E-02	IRIS	NC	6.13E+00	<b>6.13E+00</b>
Anthracene			3.00E-01	IRIS	NC	3.07E+01	<b>3.07E+01</b>
Carbazole	2.00E-02	HEAST	ND		1.43E-01	NA	<b>1.43E-01</b>
Chrysene	7.30E-03	NCEA	ND	IRIS	3.82E-01	NA	<b>3.82E-01</b>
Di-n-butylphthalate			1.00E-01	IRIS	NC	1.02E+01	<b>1.02E+01</b>
Fluorene			4.00E-02	IRIS	NC	4.09E+00	<b>4.09E+00</b>
Phenanthrene			3.00E-02	IRIS	NC	3.07E+00	<b>3.07E+00</b>
<b>PCBs</b>							
Aroclor 1248	2.00E+00	IRIS	2.00E-05	[c]	1.43E-03	2.04E-03	<b>1.43E-03</b>
Aroclor 1254	2.00E+00	IRIS	2.00E-05	IRIS	1.43E-03	2.04E-03	<b>1.43E-03</b>
<b>Inorganics</b>							
Chromium, total					NC	NA	NA
Chromium (III)			1.50E+00	IRIS	NC	1.53E+02	<b>1.53E+02</b>
Chromium (VI)			3.00E-03	IRIS	NC	3.07E-01	<b>3.07E-01</b>
Lead, total	ND	IRIS			NC	NA	<b>1.90E-02</b>

Notes:

[a] - Isopropylbenzene value used as surrogate.

[b] - Pyrene value used as surrogate.

[c] - Aroclor 1254 value used as surrogate.

[d] - Residential groundwater value used as surrogate; the only available dose-response data are for the inhalation exposure route, which is not evaluated for non-residential groundwater.

NA - Not Applicable/Available

NC - Non-Carcinogenic

**TABLE 5**  
**HEALTH-BASED TIER II VALUES - RESIDENTIAL GROUNDWATER**  
**AlliedSignal Industrial Complex, South Bend, Indiana**

Tier II Values based on Carcinogenic Effects												
$C_{goal} = \frac{1.70E-04}{(2 \times SFo) + (7.5 \times SFI)}$												
Tier II Values based on Non-Carcinogenic Effects												
$C_{goal} = \frac{60.8}{(2 \times RfDo) + (7.5 \times RfDi)}$												
Chemical	SFo (mg/kg/day)	Source	RfDo (mg/kg/day)	Source	SFI (mg/kg/day)	Source	RfDi (mg/kg/day)	Source	Cgoal - Cancer (mg/kg)	Cgoal - Non-cancer (mg/kg)	MCLs (mg/L)	Selected Tier II (mg/L)
<b>VOCs</b>												
Isopropylbenzene			1.00E-01	IRIS			1.10E-01	IRIS	NC	6.89E-01		6.89E-01
2-Methylnaphthalene			2.00E-02	NCEA			ND		NC	6.08E-01		6.08E-01
1,2,4-Trimethylbenzene			5.00E-02	NCEA			1.70E-03	NCEA	NC	1.37E-02		1.37E-02
1,3,5-Trimethylbenzene			5.00E-02	NCEA			1.70E-03	NCEA	NC	1.37E-02		1.37E-02
trans-1,2-Dichloroethylene			2.00E-02	IRIS			ND		NC	6.08E-01	0.1	1.00E-01
1,2-dichloropropane	6.80E-02	IRIS	ND				1.10E-03	IRIS	1.25E-03	8.92E-03	0.005	5.00E-03
methyl-t-butyl-ether			ND				8.57E-01	IRIS	NC	6.96E+00		6.95E+00
Chlorobenzene			2.00E-02	IRIS			5.70E-03	HEAST	NC	4.29E-02		4.29E-02
Chloroethane	2.90E-03	NCEA	4.00E-01	NCEA			2.80E+00	IRIS	2.93E-02	7.92E+00		2.93E-02
<b>SVOCs</b>												
Benzo(g,h,i)perylene			3.00E-02	[a]			ND		NC	9.12E-01		9.12E-01
1,2-Dichlorobenzene			9.00E-02	NCEA			5.70E-02	HEAST	NC	3.95E-01	6.00E-01	6.00E-01
1,3-Dichlorobenzene			9.00E-04	NCEA			ND		NC	2.74E-02		2.74E-02
1,4-Dichlorobenzene	2.40E-02	HEAST	3.00E-02	HEAST	2.20E-02	NCEA	2.30E-01	IRIS	7.98E-04	6.12E-01	7.50E-02	7.50E-02
2,4-Dimethylphenol			2.00E-02	IRIS			ND		NC	6.08E-01		6.08E-01
<b>Inorganics</b>												
Chromium, total									NC	NA		NA
Chromium (III)			1.50E+00	IRIS			ND		NC	4.56E+01	1.00E-01	4.56E+01
Chromium (VI)			3.00E-03	IRIS	4.10E+01	IRIS	2.90E-05	IRIS	5.53E-07	2.34E-04	1.00E-01	1.00E-01
Lead, total	ND	IRIS							NC	NA	1.50E-02	1.50E-02

**Notes:**

[a] - Pyrene value used as surrogate.

NA - Not Applicable/Available

NC - Non-Carcinogenic

**RISK-BASED CLEANUP GOALS FOR TPH**

# **ABB MEMORANDUM**

**DATE:** November 10, 1996  
**TO:** Donald A. Walsh  
**FROM:** Gregory A. Beumel  
**SUBJECT:** Calculation of Acceptable Risk-Based TPH Values for Jet Fuel in Soil

Acceptable risk-based TPH levels were calculated for jet fuel in soil. These calculations were performed using the methodology developed by the Massachusetts Department of Environmental Protection Office (1994)<sup>1</sup> and assumed an excavation worker exposure scenario. This scenario assumes 30 days of exposure during one year and no future exposure. Based on these calculations, three risk-based TPH values were determined. The first is for jet fuel that has been "weathered" (i.e., the release occurred sufficiently long ago that the volatile and most semi-volatile organic compounds, including benzene, toluene, ethylbenzene, and xylenes (BTEX) have evaporated). The next two are for (1) JP5 or Jet A, and (2) JP4 that have been recently released and still contain the BTEX compounds and other volatile and semi-volatile organic compounds. The results are as follows:

Compound	Risk-Based Level (ppm)
Jet Fuel (weathered)	14,300
JP5 or Jet A	12,000
JP4	6,000

The spreadsheets used to perform the calculations are attached.

<sup>1</sup> Massachusetts Department of Environmental Protection, 1994. "Interim Final Petroleum Report: Development of Health-Based Alternative to the Total Petroleum Hydrocarbon (TPH) Parameter (August, 1994)".

Table 8

JP-4 Composition from USAir Force and ATSDR

Ref. Interim Final Petroleum Report: Development of Health-Based Alternative  
to the Total Petroleum Hydrocarbon (TPH) Parameter, (MADEP, August 1994)

Component	Wt %
C4-C8 Alkanes	34.70%
C9-C18 Alkanes	19.20%
Aromatics	7.57%
Benzene	0.50%
Toluene	1.33%
Ethylbenzene	0.37%
Xylenes	2.32%
Naphthalenes	2.90%

TABLE 9

DIRECT CONTACT WITH AND INCIDENTAL INGESTION OF SUBSURFACE SOIL  
 EXCAVATION WORKER  
 ALLIED  
 SOUTH BEND, IN  
 CALCULATION OF RISK-BASED TPH LEVELS FOR JP-4 (based on Air Force/ATSDR composition)

## EXPOSURE PARAMETERS

## EQUATIONS

PARAMETER	SYMBOL	VALUE	UNITS	SOURCE	EQUATIONS
CONCENTRATION-SOIL	CS	chemical-specific	liter/soil-specific		CANCER RISK = INTAKE (mg/kg-day) x CANCER SLOPE FACTOR (mg/kg-day)-1
INGESTION RATE	IR	480	mg/day	USEPA, 1991	
FRACTION INGESTED	FI	100%	unitless	Assumption	HAZARD QUOTIENT = INTAKE (mg/kg-day) / REFERENCE DOSE (mg/kg-day)
REFERENCE FACTOR	RF	1	mg/cm <sup>2</sup> -event	USEPA, 1992a	
ABSORPTION FRACTION	AF	chemical-specific	unitless	USEPA, 1992b	
SUBSURFACE AREA EXPOSED	SA	5,750	cm <sup>2</sup>	USEPA, 1992a	
DAILY ABSORBED DOSE-RATE	DArcovol	chemical-specific	mg/cm <sup>2</sup> -event	USEPA, 1992a	
CONVERSION FACTOR	CF	1,000-09	kg/lug	Organic conversion	INTAKE-INGESTION = $\frac{CS \times IR \times FI \times CF \times RF \times SA}{BW \times AT \times 365 \text{ days/year}}$
CONVERSION FACTOR	CF	1,000-06	kg/lng	Inorganic conversion	
BODY WEIGHT	BW	70	kg	USEPA, 1991	
EXPOSURE FREQUENCY	EF	10	day/year [1]	Assumption	
EXPOSURE DURATION	ED	1	years	USEPA, 1991	
AMMAGING FLUX					
CANCER	AT	70	years	USEPA, 1991	INTAKE-DERMAL = $\frac{DArcovol \times SA \times EF \times ED}{BW \times AT \times 365 \text{ days/year}}$
NONCANCER	AT	1	years	USEPA, 1991	Where: DArcovol = $CS \times AF \times ABF \times CF^*$
					Note: For noncarcinogenic effects, AT = ED
[1] Units for exposure frequency are events/year in the calculation of the dermally absorbed dose.					
USEPA, 1991. Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors"; USEPA Directive 9285.6-03.					
USEPA, 1992a. Dermal Exposure Assessment: Principles and Applications; EPA/600/R-91/011B; January 1992.					
USEPA, 1992b. USEPA Region IV Guidance Memorandum; February 10, 1992.					

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TABLE 9

DIRECT CONTACT WITH AND INCIDENTAL INGESTION OF SUBSURFACE SOIL  
EXCAVATION WORKER

ALLIED

SOUTH BEND, IN

CALCULATION OF RISK-BASED TPH LEVELS FOR JP-4 (based on Air Force/ATSDR computation)

CARCINOGENIC EFFECTS

COMPOUND	INORGANIC OR ORGANIC I/O	SOIL CONCENTRATION	UNITS <sup>a</sup>	INTAKE INGESTION (mg/kg-day)	ORAL CSF	CANCER RISK INGESTION ABS(I)	DERMAL CSF	INTAKE (mg/kg-day)	DERMAL CSF(I)	DERMAL CSF(II)	CANCER RISK DERMAL	TOTAL CANCER RISK
TPH Concentration	o	6,000,000	ug/kg	4.8E-05			0.01	5.8E-06				
Aromatics/Aalkenes (9.66%)	o	579,600	ug/kg	4.7E-06			0.01	5.6E-07				
Alkanes	o											
C4-C8 (34.70%)	o	2,082,000	ug/kg	1.7E-05			0.01	2.0E-06				
C9-C10 (19.10%)	o	1,152,000	ug/kg	9.3E-06			0.01	1.1E-06				
C11-C16 (0%)	o	0										
Benzene (0.50%)	o	30,000	ug/kg	2.4E-07	0.029	7.0E-09	0.01	2.9E-08	0.029	8.4E-10	7.8E-09	
Toluene (1.33%)	o	79,800	ug/kg	6.4E-07			0.01	7.7E-08				
Ethylbenzene (0.37%)	o	22,200	ug/kg	1.8E-07			0.01	2.1E-08				
Xylenes (0.31%)	o	139,200	ug/kg	1.1E-06			0.01	1.3E-07				
	o											
	o											
<b>SUMMARY CANCER RISK</b>							7E-09				8E-10	8E-09

[1] USEPA Region IV guidance specifies absorption factors of 1% for organics and 0.1% for inorganics (February 10, 1992).

[2] Calculated from Oral CSFs.

[N] = not evaluated.

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TABLE 9

DIRECT CONTACT WITH AND INCIDENTAL INGESTION OF SUBSURFACE SOIL.

EXCAVATION WORKER

ALTAIR

SOUTH BEND, IN

CALCULATION OF RISK-BASED TPH LEVELS FOR JP-4 (based on Air Force/ATSDR composition)

## NONCARCINOGENIC EFFECTS

COMPOUND	INORGANIC OR ORGANIC	SOIL CONCENTRATION	UNITS	INTAKES	ORAL RFD	HAZARD QUOTIENT	DERMAL RFD (1)	INTAKE	DERMAL RFD (1)	HAZARD QUOTIENT	TOTAL HAZARD QUOTIENT
	IN	(ug/kg)		(mg/kg-day)	(mg/kg/day)	ANS(I)	DERMAL INCUBATION	(mg/kg-day)	(mg/kg-day)	DERMAL INCUBATION	
TPH Concentration	0	6,000,000	ug/kg	3.4E-03		0.01	4.1E-04				
Aromatic Alkenes (9.64%)	0	579,600	ug/kg	3.3E-04	0.03	1.1E-02	0.01	3.9E-05	0.03	1.3E-03	1.2E-02
Alkanes	0										
C4-C6 (34.76%)	0	2,082,000	ug/kg	1.2E-03	0.06	2.0E-02	0.01	1.4E-04	0.06	2.3E-03	2.2E-02
C8-C10 (19.20%)	0	1,152,000	ug/kg	6.5E-04	0.6	1.1E-03	0.01	7.8E-05	0.6	1.3E-04	1.2E-03
C10-C36 (0%)	0	0			6					6	
Benzenes (0.50%)	0	30,000	ug/kg	1.7E-05	0.0003	5.6E-02	0.01	2.0E-06	0.0003	6.8E-03	6.3E-02
Toluene (1.33%)	0	79,800	ug/kg	4.5E-05	2	2.2E-05	0.01	5.4E-06	2	2.7E-06	2.5E-05
Ethylbenzene (0.37%)	0	22,200	ug/kg	1.3E-05	0.01	1.3E-03	0.01	1.5E-06	0.082	1.8E-05	1.3E-03
Xylenes (2.32%)	0	139,200	ug/kg	7.8E-05	2	3.9E-05	0.01	9.4E-06	2	4.7E-06	4.4E-05
SUMMARY HAZARD INDEX						9E-02				1E-02	1.0E-01
(1) USEPA Region IV guidance specifies absorption factors of 1% for organics and 0.1% for inorganics (February 10, 1992).											
(2) Calculated from Oral RFDs.											
N.D. = no data available.											

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TABLE 10

INHALATION OF PARTICULATES - SUBSURFACE SOIL  
EXCAVATION WORKER

AHLER

SOUTHBEND, IN

CALCULATION OF RISK-BASED TPH LEVELS FOR TP-4 (based on Aro-Forane/ATSDR composition)

## EXPOSURE PARAMETERS

## EQUATIONS

PARAMETER	SYMBOL	VALUE	UNITS	SOURCE	EQUATIONS
SOIL CONCENTRATION	C	chemical-specific	chemical-specific		
PART-ABSORPTION FACTOR	PBF	0.0001 ± 0.01	mg/kg	(1)	CANCER RISK = INTAKE (mg/kg-day) x INHALATION-CANCER-SLOPE-FACTOR (mg/kg-day) <sup>-1</sup>
CONCENTRATION AIR	CA	chemical-specific	mg/m <sup>3</sup>		
INHALATION RATE	IR	2.5	m <sup>3</sup> /hour	USEPA, 1993	HAZARD QUOTIENT = INTAKE (mg/kg-day) / INHALATION-REFERENCE-DOSE (mg/kg-day)
BODY WEIGHT	BW	70	kg	USEPA, 1991	
EXPOSURE TIME	ET	8	hours/day	Assumption	INTAKE = CA x IR x ET x BW x HD
EXPOSURE FREQUENCY	EF	30	days/year	Assumption	BW x AT x 365 days/yr
EXPOSURE DURATION	ED	4	years	Assumption	
CONFIDENCE FACTOR	CF	0.001	mg/kg	Organic only	
ASSESSMENT ISSUE					
CANCER	AT	70	years	USEPA, 1991	Where:
NONCANCER	AT	1	years	USEPA, 1991	CA = C x CF x P/B/F

TP-4 PEP has been derived in Appendix A to this report.

USEPA, 1991. Human Health Evaluation Manual, Supplemental Guidance.

'Standard Default Exposure Factors'; OSWER Directive V2.83.6.01.

USEPA, 1993. Supplemental Guidance to RAGS; Region IV, Human Health Risk Assessment Bulletin No. 3.

Notes: If no organic factor is listed, AT = ED

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TABLE IO

## INHALATION OF PARTICULATES - SUBSURFACE SOIL

EXCAVATION WORKER

ALLIED

SOUTH BEND, IN

CALCULATION OF RISK-BASED TPH LEVELS FOR JP-4 (based on Air Force/ATSDR composition)

## CARCINOGENIC EFFECTS

COMPOUND	INORGANIC OR ORGANIC NO	SOIL CONCENTRATION ( $\mu$ )	UNITS	AIR CONCENTRATION ( $\mu$ g/m $^3$ )	INTAKE (mg/kg-day)	INHALATION CAF	CANCER RISK (mg/kg-day) $^{>1}$
TPH Concentration	0	6,000,000	ug/kg	1.20E-04	4.0E-08		
Aromatics/Arenes (9.66%)	0	579,600	ug/kg	1.16E-05	3.9E-09		
Alkanes	0						
C4-C8 (34.70%)	0	2,082,000	ug/kg	4.16E-05	1.4E-08		
C9-C18 (19.30%)	0	1,152,000	ug/kg	2.30E-05	7.7E-09		
C19-C36 (0%)	0	0					
Benzene (0.50%)	0	30,000	ug/kg	6.00E-07	2.0E-10	0.029	5.8E-12
Toluene (1.33%)	0	79,800	ug/kg	1.60E-06	5.4E-10		
Ethylbenzene (0.31%)	0	22,200	ug/kg	4.44E-07	1.5E-10		
Xylenes (1.32%)	0	139,200	ug/kg	2.78E-06	9.3E-10		
<b>SUMMARY CANCER RISK</b>							<b>6E-12</b>
NB = not evaluated.							

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11/22/06

TABLE 10

INITIATION OF PARTICULATES - SUBSURFACE SOIL  
EXCAVATION WORKER  
ALLIED

SOUTH BEND, IN

CALCULATION OF RISK-BASED TPH LEVELS FOR JP-4 (based on Air Force/ATSDR composition)

## NONCARCINOGENIC EFFECTS

COMPOUND	INORGANIC OR ORGANIC NO	SOIL CONCENTRATION	UNITS	AIR CONCENTRATION (ug/m <sup>3</sup> )	INTAKE (mg/kg-day)	INHALATION RM (mg/kg-day)	HAZARD QUOTIENT	
							RD	QUOTIENT
TPH Concentration	0	6,000,000	ug/kg	1.20E-04	2.8E-06			
Aromatics/Alkenes (9.66%)	0	579,600	ug/kg	1.16E-05	2.7E-07	400	6.8E-10	
Alkanes	0							
C4-C8 (34.70%)	0	2,082,000	ug/kg	4.16E-05	9.8E-07			
C9-C18 (19.20%)	0	1,152,000	ug/kg	2.30E-05	5.4E-07			
Benzene (0.50%)	0	30,000	ug/kg	6.00E-07	1.4E-08			
Toluene (1.33%)	0	79,800	ug/kg	1.60E-06	3.7E-08	400	9.4E-11	
Ethylbenzene (0.37%)	0	22,200	ug/kg	4.44E-07	1.0E-08	1000	1.0E-11	
Xylenes (2.31%)	0	139,200	ug/kg	2.78E-06	6.5E-08			
SUMMARY HAZARD INDEX							8E-10	
ND = no data available.								

ABB-Environmental Services, Inc.  
TPHLEVEL.XLS  
11/22/96

**TIER II CLEANUP GOALS COMPARISON TABLES**

## Analytical Summary - VOCs in Groundwater

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## Area 2 - Plant 2 Basement

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## **Voluntary Site Investigation**

dSignal Industrial Com

South Bend, Indiana			
CONSTITUENT (Units in ug/l)	SITE	02GP001	
	SAMPLE ID	1996 VRP	02PW00119
	DATE	Tier II	11/16/96
	RESULT TYPE	Non-Residential	Primary
Benzene	98.6	8.9	
Ethylbenzene	10220	9.5	
Isopropylbenzene	1.02E + 4	14	
1,2,4-Trimethylbenzene	6.11E + 3	11	
Sum of Concentrations	43.40		

Analytical Summary - VOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex

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South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	03GP001	03GP001	03GP001	03GP001	03GP002
	SAMPLE ID	03PS0104	03PS0106	03PS0106	03PS0112	03PS0202
	DATE	1996 VRP	09/30/96	09/30/96	09/30/96	09/30/96
	DEPTH (ft)	Tier II	4.00	6.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	< 0.25	< 7.2	11	< 0.25	< 0.25
Ethylbenzene	1000	< 0.25	< 7.2	6.1	< 0.25	< 0.25
Xylene (total)	1000	< 0.25	11	15	< 0.25	< 0.25
Isopropylbenzene	1.0E+03	< 0.25	< 7.2	3.6	< 0.25	< 0.25
n-Propylbenzene	1.00E+03	< 0.25	< 7.2	< 0.25	< 0.25	< 0.25
1,3,5-Trimethylbenzene	1.00E+03	< 0.25	< 7.2	3.8	< 0.25	< 0.25
1,2,4-Trimethylbenzene	1.00E+03	< 0.25	< 7.2	3.9	< 0.25	< 0.25
Naphthalene	10000	< 0.25	1.9#	6.7	0.37	< 0.25
Acenaphthene	1.0E+04	---	< 0.33	---	---	---
2-Methylnaphthalene	10000	< 0.5	6.1#	20	< 0.5	< 0.5
1,1-Dichloroethane	1000	0.28	< 7.2	0.17	< 0.1	0.18
1,1-Dichloroethene	0.08	< 0.1	< 7.2	0.16	< 0.1	< 0.1
1,2-Dichloroethane	0.37	< 0.1	< 7.2	0.12	< 0.1	< 0.1
cis-1,2-Dichloroethene	102.49	0.86	7.4	4.1	< 0.1	0.49
trans-1,2-Dichloroethene	2.29E+02	< 0.1	< 7.2	< 0.1	< 0.1	< 0.1
1,1,1-Trichloroethane	1000	0.31	9.1	11	0.33	1.3
Chlorobenzene	3.16E+02	< 0.1	< 7.2	0.12	< 0.1	< 0.1
Methylene chloride	9.08E+00	< 0.1	< 7.2	< 0.1	< 0.1	< 0.1
Tetrachloroethene	8.01	0.1	[17]	[23]	0.27	< 0.1
Trichloroethene	25.73	0.48	< 7.2	0.34	< 0.1	1
Vinyl chloride	0.13	< 0.1	< 7.2	[0.87]	< 0.1	< 0.1
1,2-Dichlorobenzene	---	---	< 7.2#	---	---	---
1,3-Dichlorobenzene	---	---	< 7.2#	---	---	---
1,4-Dichlorobenzene	---	---	< 7.2#	---	---	---
Sum of Concentrations	2.03	62.60	108.77	0.87	2.95	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported. () = Greater than Action Level

RCL [REDACTED] via Comparison [REDACTED] VRP [REDACTED] I No [REDACTED] dent [REDACTED]

Analytical Summary - VOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	03GP002	03GP002	03GP003	03GP003	03GP004
	SAMPLE ID	03PS0206	03PS0212	03PS0304	03PS0306	03PS0402
	DATE	1996 VRP	09/30/96	09/30/96	09/30/96	09/30/96
DEPTH (ft)	Tier II	8.00	12.00	4.00	6.00	2.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	0.28
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	0.35	<0.1	0.12	0.15
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	0.18	0.2	<0.1	0.28	0.23
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	8.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	0.27
Trichloroethene	25.73	0.62	0.96	0.11	0.33	0.19
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---
Sum of Concentrations	0.80	1.51	0.11	0.71	1.12	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	03GP004	03GP004	03GP005	03GP005	03GP005
	SAMPLE ID	03PS0408	03PS0410	03PS0504	03PS0508	03PS0612
	DATE	1996 VRP	09/30/96	09/30/96	10/01/96	10/01/96
	DEPTH (ft)	Tier II	8.00	10.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.05	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.05	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.1	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.01	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.05#	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	<0.33	---	---	---	---
2-Methylnaphthalene	10000	<0.1#	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.05	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.05	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.05	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.05	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.05	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.05	0.18	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.05	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.05	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	0.15	1.2	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.05	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene		<0.05#	---	---	---	---
1,3-Dichlorobenzene		<0.05#	---	---	---	---
1,4-Dichlorobenzene		<0.05#	---	---	---	---
Sum of Concentrations		0.15	1.36	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

For RCL VOCs

Matrix Comparison 100% VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	03GP006	03GP006	03GP006	03GP006	03GP007
SAMPLE ID	03PS0606	03PS0610	03PS0616	03GP00601	03PS0704
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/01/96	10/01/96	11/06/97
	DEPTH (ft)	Tier II	6.00	10.00	18.00
	RESULT-TYPE	Non-Residential	Primary	Primary	Primary
Toluene	1000	< 2.6	< 2.6	< 1	< 0.06
Ethyl benzene	1000	< 2.6	< 2.6	< 1	< 0.06
Xylene (total)	1000	< 2.6	< 2.6	< 1	< 0.06
Isopropylbenzene	1.0E+03	< 2.6	< 2.6	< 1	< 0.06
n-Propylbenzene	1.00E+03	< 2.6	< 2.6	< 1	< 0.06
1,3,6-Trimethylbenzene	1.00E+03	< 2.6	< 2.6	< 1	< 0.06
1,2,4-Trimethylbenzene	1.00E+3	< 2.6	< 2.6	< 1	< 0.06
Naphthalene	10000	< 2.6	< 2.6	< 1	< 0.06#
Acenaphthene	1.0E+04	...	...	...	< 0.00033
2-Methylnaphthalene	10000	< 5	< 5	< 2	0.00048#
1,1-Dichloroethane	1000	< 0.1	< 0.1	< 0.1	< 0.06
1,1-Dichloroethene	0.08	[6.9]	< 0.1	< 0.1	< 0.06
1,2-Dichloroethane	0.37	< 0.1	< 0.1	< 0.1	< 0.06
cis-1,2-Dichloroethene	102.49	< 0.1	< 0.1	< 0.1	< 0.06
trans-1,2-Dichloroethene	2.29E + 02	< 0.1	< 0.1	< 0.1	< 0.06
1,1,1-Trichloroethane	1000	< 0.1	< 0.1	< 0.1	< 0.06
Chlorobenzene	3.16E + 02	< 0.1	< 0.1	< 0.1	< 0.06
Methylene chloride	9.08E + 00	< 0.1	< 0.1	< 0.1	< 0.06
Tetrachloroethene	8.01	< 0.1	< 0.1	2.5	< 0.06
Trichloroethene	25.73	[29]	[48]	19	< 0.06
Vinyl chloride	0.13	< 1	< 1	< 0.4	< 0.1
1,2-Dichlorobenzene	...	...	...	...	< 0.06#
1,3-Dichlorobenzene	...	...	...	...	< 0.06#
1,4-Dichlorobenzene	...	...	...	...	< 0.06#
Sum of Concentrations	35.90	48.00	21.50	0.00	5.66

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method; highest result reported. [ ] = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.

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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

CONSTITUENT (Units in mg/kg)	DATE	BITE	03GP007	03GP007	03GP008	03GP008	03GP008
		SAMPLE ID	03PS0708	03PS0714	03PS0802	03PS0806	03PS0808
DEPTH (ft)	DATE	Tier II	8.00	14.00	2.00	6.00	8.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1996 VRP	1000	<0.25	0.46	<0.25	<0.25	<0.25
Ethyl benzene		1000	0.89	0.83	<0.25	<0.25	<0.25
Xylene (Total)		1000	0.61	0.81	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	0.66	0.36	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	0.42	0.54	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	0.20	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	0.85	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04					
2-Methylnaphthalene		10000	<0.6	0.6	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene		2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene		3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride		9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene		---	---	---	---	---	---
1,3-Dichlorobenzene		---	---	---	---	---	---
1,4-Dichlorobenzene		---	---	---	---	---	---
<b>Sum of Concentrations</b>		<b>2.86</b>	<b>4.49</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Georgia Comparison 000 VRP T Non Residential

Analytical Summary - VOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
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CONSTITUENT	SITE	03GP008	03GP009	03GP009	03GP009	03GP010
	SAMPLE ID	03QD0808	03PB0904	03PS0908	03PS0910	03PB1004
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/01/96	10/02/96	10/02/96	10/02/96
	DEPTH (ft)	Tier II	8.00	4.00	8.00	10.00
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary
Toluene		1000	< 0.25	< 0.25	< 0.25	< 0.25
Ethylbenzene		1000	< 0.25	< 0.25	< 0.25	< 0.25
Xylene (total)		1000	< 0.25	< 0.25	< 0.25	< 0.25
Isopropylbenzene		1.0E+03	< 0.25	< 0.25	< 0.25	< 0.25
n-Propylbenzene		1.00E+03	< 0.25	< 0.25	< 0.25	< 0.25
1,3,5-Trimethylbenzene		1.00E+03	< 0.25	< 0.25	< 0.25	< 0.25
1,2,4-Trimethylbenzene		1.00E+3	< 0.25	< 0.25	< 0.25	< 0.25
Naphthalene		10000	< 0.25	< 0.25	< 0.25	< 0.25
Acenaphthene		1.0E+04	---	---	---	---
2-Methylnaphthalene		10000	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane		1000	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethene		0.08	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichloroethane		0.37	< 0.1	< 0.1	< 0.1	< 0.1
cis-1,2-Dichloroethene		102.49	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethene		2.29E+02	< 0.1	< 0.1	< 0.1	< 0.1
1,1,1-Trichloroethane		1000	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene		3.16E+02	< 0.1	< 0.1	< 0.1	< 0.1
Methylene chloride		9.08E+00	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene		8.01	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethene		25.73	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl chloride		0.13	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene		---	---	---	---	---
1,3-Dichlorobenzene		---	---	---	---	---
1,4-Dichlorobenzene		---	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**

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#### **South Bend, Indiana**

016B010

03GP010 031

03GP010

03GP010

CONSTITUENT	SITE	03GP010	03GP010	03GP011	03GP011	03GP011
	SAMPLE ID	03PS1006	03P61012	03PS1106	03PS1106	03PS1114
	(Units in mg/kg)	DATE	1996 VRP	10/02/96	10/02/96	10/02/96
	DEPTH (ft)	Tier II	6.00	12.00	6.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	2.6	<0.05
Ethyl benzene		1000	<0.25	<0.25	4.9	<0.05
Xylene (total)		1000	<0.25	<0.25	12	<0.1
Isopropylbenzene		1.0E+03	<0.25	<0.25	4.7	<0.01
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.01
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.01
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	1.8	<0.01
Naphthalene		10000	<0.25	<0.25	1.3	<0.06#
Aceanaphthene		1.0E+04	---	---	---	<0.33
2-Methylnaphthalene		10000	<0.5	<0.5	7	<0.1#
1,1-Dichloroethane		1000	<0.1	<0.1	0.93	<0.05
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.05
1,2-Dichloroethane		0.37	<0.1	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene		102.49	<0.1	1.5	1.7	<0.06
trans-1,2-Dichloroethane		2.29E+02	<0.1	<0.1	0.11	<0.06
1,1,1-Trichloroethane		1000	<0.1	<0.1	0.74	0.23
Chlorobenzene		3.16E+02	<0.1	<0.1	<0.1	<0.06
Methylene chloride		9.08E+00	<0.1	<0.1	<0.1	<0.06
Tetrachloroethane		8.01	<0.1	<0.1	0.24	0.57
Trichloroethene		26.73	0.18	0.52	0.62	0.24 J
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene		---	---	---	---	<0.05#
1,3-Dichlorobenzene		---	---	---	---	<0.05#
1,4-Dichlorobenzene		---	---	---	---	<0.05#
Sum of Concentrations		0.18	2.02	38.44	1.04	2.52

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent with more than one test method, highest result reported.

For RCL Model

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SITE	03GP011	03GP012	03GP012	03GP012	03GP012
SAMPLE ID	03PS1122	03PS1208	03PS1216	03PS1220	03GP01201
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/02/96	10/02/96	10/02/96
DEPTH (ft)	Tier II	22.00	8.00	16.00	20.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	0.73	<0.25	<0.6
Ethyl benzene	1000	<0.25	0.53	<0.25	<0.6
Xylene (total)	1000	<0.25	1.3	<0.25	<0.6
Isopropylbenzene	1.0E+03	<0.25	0.59	<0.25	<0.6
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.6
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.6
1,2,4-Trimethylbenzene	1.00E+03	<0.25	0.32	<0.25	<0.6
Naphthalene	10000	<0.25	<0.25	<0.25	<0.8
Acenaphthene	1.0E+04				<0.33
2-Methylnaphthalene	10000	<0.5	<0.6	<0.6	<1
1,1-Dichloroethane	1000	<0.1	0.7	<0.1	<0.1
1,1-Dichloroethene	0.08		<0.1	<0.1	<0.05
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene	102.49	<0.1	0.23	<0.1	0.24
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	0.4	0.11	1.8	2.2
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	0.3	<0.1	0.41	<0.1
Trichloroethene	25.73	2.1	0.16	10	18
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.24
1,2-Dichlorobenzene	---	---	---	---	<0.05#
1,3-Dichlorobenzene	---	---	---	---	<0.05#
1,4-Dichlorobenzene	---	---	---	---	<0.05#
Sum of Concentrations		3.80	4.67	12.21	21.44
					0.81

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. ||| = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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SITE	03GP013	03GP013	03GP013	03GP014	03GP014
SAMPLE ID	03PS1308	03PS1312	03PS1318	03PS01404	03PS01408
CONSTITUENT (Units in mg/kg)	DATE: 1996 VRP	10/02/96	10/02/96	10/02/96	10/03/96
DEPTH (ft)	Tier II	8.00	12.00	18.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene	1000	<0.26	13	5	<0.06
Ethyl benzene	1000	<0.25	<2.6	1.5	<0.06
Xylene (Total)	1000	<0.25	11	6.3	<0.06
Isopropylbenzene	1.0E+03	<0.25	<2.6	0.61	<0.05
n-Propylbenzene	1.00E+03	<0.25	<2.6	<0.56	<0.05
1,3,5 Trimethylbenzene	1.00E+03	<0.25	<2.6	<0.56	<0.05
1,2,4 Trimethylbenzene	1.00E+03	<0.25	<2.6	<0.56	<0.05
Naphthalene	10000	<0.25	<2.6	<0.56	<0.05#
Acenaphthene	1.0E+04	...	...	...	ND
2-Methylnaphthalene	10000	<0.6	<5.2	<1.1	<0.1#
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.05
1,1-Dichloroethene	0.08	<0.1	<0.1	[0.67]	<0.05
1,2-Dichloroethane	0.37	<0.1	<0.1	0.3	<0.06
cis-1,2-Dichloroethene	102.49	0.43	26	12	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	0.41	<0.06
1,1,1-Trichloroethane	1000	0.47	37	14	<0.05
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.05
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	2.1	[55]	[20]	<0.06
Trichloroethene	25.73	1.8	[70]	22	<0.06
Vinyl chloride	0.13	<0.1	<1	<0.22	<0.1
1,2-Dichlorobenzene	...	...	...	...	<7.2#
1,3-Dichlorobenzene	...	...	...	...	<7.2#
1,4-Dichlorobenzene	...	...	...	...	<7.2#
Sum of Concentrations	4.80	212.00	82.69	66.00	[2110.00]

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported. () = Greater than Action Level ND = Not Detected

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non Residential

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CONSTITUENT (Units: ln. mg/kg)	SITE	03GP014	03GP014	03GP014	03GP015	03GP015
	SAMPLE ID	03PS01412	03PS01416	03GP014	03PS01606	03PS01512
DATE	1996 VRP	10/03/96	10/03/96	11/06/97	10/03/96	10/03/96
DEPTH (ft)	Tier II	12.00	16.00	1.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	47	42	<0.06	<0.68	<0.53
Ethyl benzene	1000	<26	<16	<0.06	<0.68	<0.53
Xylene (total)	1000	<26	<16	<0.06	<0.68	<0.53
Isopropylbenzene	1.0E + 03	<26	<16	<0.06	<0.68	<0.53
n-Propylbenzene	1.00E + 03	<26	<16	<0.06	<0.68	<0.53
1,3,5-Trimethylbenzene	1.00E + 03	<26	<16	<0.06	<0.68	<0.53
1,2,4-Trimethylbenzene	1.00E + 3	<26	<16	<0.06	<0.68	<0.53
Naphthalene	10000	<26	<16	<0.06#	<0.68	<0.53
Acenaphthene	1.0E + 04	---	---	<0.00033	---	---
2-Methylnaphthalene	10000	<62	<30	<0.1#	<1.4	<1.1
1,1-Dichloroethane	1000	<0.1	<0.1	<0.05	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.05	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.05	<0.1	<0.1
cis-1,2-Dichloroethane	102.49	<0.1	<0.1	<0.05	0.89	<0.1
trans-1,2-Dichloroethene	2.29E + 02	<0.1	<0.1	<0.05	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	17	<0.05	1.6	0.48
Chlorobenzene	3.16E + 02	<0.1	<0.1	<0.05	<0.1	<0.1
Methylene chloride	9.08E + 00	<0.1	<0.1	<0.05	<0.1	<0.1
Tetrachloroethene	8.01	[48]	[16]	<0.06	<0.1	<0.1
Trichloroethene	26.73	[300]	[200]	<0.06	6	0.71
Vinyl chloride	0.13	<10	<6	<0.1	<0.27	<0.21
1,2-Dichlorobenzene	---	---	---	<0.06#	---	---
1,3-Dichlorobenzene	---	---	---	<0.06#	---	---
1,4-Dichlorobenzene	---	---	---	<0.06#	---	---
Sum of Concentrations	395.00	275.00	0.00	8.39	1.19	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. [ ] = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in mg/kg)	SITE	03GP015	03GP015	03GP015	03GP015	03GP015
	SAMPLE ID	03PS01514	03QD01514	03PS01518	03PS01520	03GP01501
	DATE	1996 VRP	10/03/96	10/03/96	10/03/96	10/03/96
RESULT TYPE	DEPTH (ft)	Tier II	14.00	14.00	18.00	20.00
		Non-Residential	Primary	Duplicate 1	Primary	Primary
Toluene	1000	<0.6 *	0.28	1	2.5	<0.05
Ethyl benzene	1000	<0.6 *	<0.25	<0.62	<1.2	<0.05
Xylene (total)	1000	<0.6 *	0.35	<0.62	<1.2	<0.05
Isopropylbenzene	1.0E+03	<0.6 *	<0.25	<0.62	<1.2	<0.05
n-Propylbenzene	1.00E+03	<0.6 *	<0.25	<0.62	<1.2	<0.05
1,3,5-Trimethylbenzene	1.00E+03	<0.6 *	<0.25	<0.62	<1.2	<0.05
1,2,4-Trimethylbenzene	1.00E+03	<0.6 *	<0.25	<0.62	<1.2	<0.05
Naphthalene	10000	<0.6 *	<0.25	<0.62	<1.2	<0.05*
Acenaphthene	1.0E+04	---	---	---	---	<0.00033
2-Methylnaphthalene	10000	<1.2 *	<0.5	<1.2	<2.5	<0.1*
1,1-Dichloroethene	1000	<0.1 *	<0.1	2.2	0.84	<0.05
1,1-Dichloroethane	0.08	<0.1 *	<0.1	<0.1	<0.1	<0.05
1,2-Dichloroethene	0.37	<0.1 *	<0.1	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene	102.49	<0.1 *	0.42	12	23	<0.06
trans-1,2-Dichloroethene	2.29E+02	<0.1 *	<0.1	<0.1	<0.1	<0.05
1,1,1-Trichloroethane	1000	0.75 *	1.2	<0.1	6.6	<0.05
Chlorobanane	3.16E+02	<0.1 *	<0.1	<0.1	<0.1	<0.05
Methylene chloride	9.08E+00	<0.1 *	<0.1	<0.1	7.6	<0.05
Tetrachloroethene	8.01	<0.1 *	0.11	<0.1	<0.1	<0.05
Trichloroethene	26.73	<0.1 *	3.4	1.3	18	<0.05
Vinyl chloride	0.13	<0.24 *	<0.1	<0.26	<0.49	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	<0.05*
1,3-Dichlorobenzene	---	---	---	---	---	<0.05*
1,4-Dichlorobenzene	---	---	---	---	---	<0.05*
Sum of Concentrations	0.76	5.76	16.50	56.44	0.00	

Values represent total concentrations unless noted \* = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

For RCL VOCs: [REDACTED] Indiana Commission 100% VRP Tier 1 Non-Residential

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CONSTITUENT	(Units in mg/kg)	SITE	03GP016	03GP016	03GP016	03GP017	03GP017
		SAMPLE ID	03PS01804	03PS01808	03PS01814	03PS01708	03PS01712
DATE	1996 VRP	10/03/96	10/03/96	10/03/96	10/04/96	10/04/96	
DEPTH (ft)	Tier II	4.00	8.00	14.00	8.00	12.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.62	<0.6	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.62	<0.6	<0.25	<0.25	<0.25
Xylyne (total)	1000	<0.25	<0.62	<0.6	<0.25	<0.25	0.31 J
Isopropylbenzene	1.0E+03	<0.25	<0.62	<0.6	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.62	<0.6	<0.25	<0.25	<0.25
1,3,5 Trimethylbenzene	1.00E+03	<0.25	<0.62	<0.6	<0.25	<0.25	<0.25
1,2,4 Trimethylbenzene	1.00E+3	<0.25	<0.62	<0.6	<0.25	<0.25	0.55
Naphthalene	10000	<0.25	<0.62	<0.6	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<1.2	<1.2	<0.6	<0.6	<0.6
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	0.85	0.39	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	0.69	<0.1	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.26	<0.24	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---	---
Sum of Concentrations		0.00	0.85	1.08	0.00	0.86	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE	03GP017	03GP017	03GP018	03GP018	03GP019
	SAMPLE ID	03QD01712	03PS01715	03PS01808	03PS01812	03PS01804
CONSTITUENT	DATE	1996 VRP	10/04/96	10/04/96	10/25/96	10/25/96
	DEPTH (ft)	Tier II	12.00	16.00	8.00	12.00
	RESULT-TYPE	Non-Residential	Duplicate-1	Primary	Primary	Primary
Toluene		1000	<0.25	21	<0.25	<0.25
Ethylbenzene		1000	<0.25	74	<0.25	<0.25
Xylene (total)		1000	<0.25	160	<0.25	<0.25
(Isopropylbenzene)		1.0E+03	<0.25	13	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	8.1	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	44	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	0.35	88	<0.25	<0.25
Naphthalene		10000	<0.25	9	<0.25	<0.25
Acenaphthene		1.0E+04	---	---	---	---
2-Methylnaphthalene		10000	<0.5	24	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		0.37	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene		2.29E+02	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Chlorobenzene		3.16E+02	<0.1	<0.1	<0.1	<0.1
Methylene chloride		9.08E+00	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<2.5	<0.1	<0.1
1,2-Dichlorobenzene		---	---	---	---	---
1,3-Dichlorobenzene		---	---	---	---	---
1,4-Dichlorobenzene		---	---	---	---	---
Sum of Concentrations		0.36	441.10	0.00	0.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	(Units in mg/kg)	SITE	03GP019	03GP019	03GP020	03GP020	03GP020
		SAMPLE ID	03PS01908	03PS01912	03PS02004	03PS02008	03P602014
		DATE	1996 VRP	10/28/96	10/28/96	10/28/96	10/28/96
		DEPTH (ft)	Tier II	6.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	...	...	...	...	...	...
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Dichloroethane	0.08	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	...	...	...	...	...	...	...
1,3-Dichlorobenzene	...	...	...	...	...	...	...
1,4-Dichlorobenzene	...	...	...	...	...	...	...
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in mg/kg)	SITE	03GP021	03GP021	03GP022	03GP022	03GP022
	SAMPLE ID	03PS02104	03PS02108	03PS02204	03PS02208	03PS02212
DATE	1996 VRP	10/28/96	10/28/96	10/28/96	10/28/96	10/28/96
DEPTH (ft)	Tier II	4.00	8.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.26	<0.26	<0.26	<0.26	<0.26
Ethyl benzene	1000	<0.26	<0.26	<0.26	<0.26	<0.26
Xylene (total)	1000	<0.26	<0.26	<0.26	<0.26	<0.26
Isopropylbenzene	1.0E+03	<0.26	<0.26	<0.26	<0.26	<0.26
n-Propylbenzene	1.00E+03	<0.26	<0.26	<0.26	<0.26	<0.26
1,3,5-Trimethylbenzene	1.00E+03	<0.26	<0.26	<0.26	<0.26	<0.26
1,2,4-Trimethylbenzene	1.00E+03	<0.26	<0.26	<0.26	<0.26	<0.26
Naphthalene	10000	<0.26	<0.26	<0.26	<0.26	<0.26
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.6	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1885 VRP Tier II Non-Residential

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SITE	03GP022	08GP004	08GP004	08GP004	08GP004	11GP001
SAMPLE ID	03QD02212	08P80040B	08PS00412	08PS00416	11P800104	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/26/96	10/08/96	10/08/96	10/03/96
DEPTH (ft)	Tier II	12.00	8.00	12.00	16.00	4.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethylbenzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	1.0000	<0.25	<0.25	<0.25	<0.25	<0.25
Aceanaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.1	0.68
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.68

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in mg/kg)	SITE	11GP001	11GP002	11GP002	11GP003	11GP003
	SAMPLE ID	11PS00108	11PS00204	11PS00208	11PS00304	11PS00308
	DATE	1996 VRP	10/03/96	10/03/96	10/03/96	10/04/96
DEPTH (ft)	Tier II	8.00	4.00	8.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.26	<0.53	<0.26	<0.26	<0.26
Ethylbenzene	1000	<0.26	<0.53	<0.26	<0.26	<0.26
Xylene (total)	1000	<0.26	<0.53	<0.26	<0.26	<0.26
Isopropylbenzene	1.0E + 03	<0.26	<0.53	<0.26	<0.26	<0.26
n-Propylbenzene	1.00E + 03	<0.26	<0.53	<0.26	<0.26	<0.26
1,3,5-Trimethylbenzene	1.00E + 03	<0.26	<0.53	<0.26	<0.26	<0.26
1,2,4-Trimethylbenzene	1.00E + 3	<0.26	<0.53	<0.26	<0.26	<0.26
Naphthalene	10000	<0.26	<0.53	<0.26	<0.26	<0.26
Acenaphthene	1.0E + 04	---	---	---	---	---
2-Methylnaphthalene	1000	<0.5	<1.1	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E + 02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E + 02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E + 00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	0.32	1.4	0.37	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.21	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---
Sum of Concentrations		0.32	1.40	0.37	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL VOCs [REDACTED] Criteria Comparison 100% VRP Tier II Non-Residential [REDACTED]

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SITE	11GP003	11GP004	11GP004	11GP005	11GP005
SAMPLE ID	11PS00312	11PS00404	11PS00409	11PS00504	11PS00508
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/04/96	10/04/96	10/04/96
DEPTH (ft)	Tier II	12.00	4.00	9.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	...	...	...	...
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1
Methylene chloride	8.08E+00	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	0.28	0.18 B	0.24	0.23 B
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	...	...	...	...	...
1,3-Dichlorobenzene	...	...	...	...	...
1,4-Dichlorobenzene	...	...	...	...	...
Sum of Concentrations		0.28	0.18	0.24	0.23
					0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE	11GP005	11GP006	11GP008	11GP006	11GP006	11GP007
	SAMPLE ID	11PS00612	11PS00604	11PS00608	11PS00612	11PS00708	
DATE	1996 VRP	10/04/96	10/04/96	10/04/96	10/04/96	10/04/96	10/05/96
DEPTH (ft)	Tier II	12.00	4.00	8.00	12.00	8.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene		1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylyne (total)		1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04	---	---	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene		2.20E+02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene		3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride		9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene		---	---	---	---	---	---
1,3-Dichlorobenzene		---	---	---	---	---	---
1,4-Dichlorobenzene		---	---	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOCs

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE	11GP007	11GP007	11GP008	11GP008	11GP008
	SAMPLE ID	11PS00712	11PS00716	11PS00804	11PS00808	11PS00812
	DATE	1996 VRP	10/05/96	10/05/96	10/16/96	10/16/96
	DEPTH (ft)	Tier II	12.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04					
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane	0.37	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene	2.29E+02	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Methylene chloride	9.08E+00	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE	11GP009	11GP009	11GP009	11GP010	11GP010
	SAMPLE ID	11PS00904	11PS00910	11PS00912	11PS01004	11PS01008
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/13/96	11/13/96	11/13/96	12/17/96
	DEPTH (ft)	Tier II	4.00	10.00	12.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.25	0.36	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+3	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04	---	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethane		0.37	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
trans-1,2-Dichloroethene		2.29E+02	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Chlorobenzene		3.16E+02	<0.1	<0.1	<0.1	<0.1
Methylene chloride		9.08E+00	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		26.73	<0.1	<0.1	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene		---	---	---	---	---
1,3-Dichlorobenzene		---	---	---	---	---
1,4-Dichlorobenzene		---	---	---	---	---
Sum of Concentrations		0.00	0.36	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOA

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	(Units in mg/kg)	SITE	11GP010
		SAMPLE ID	11PS01012
		DATE	1996 VRP
		DEPTH (ft)	Tier II
		RESULT TYPE	Non-Residential Primary
Toluene	1000	<0.25	
Ethyl benzene	1000	<0.25	
Xylene (total)	1000	<0.25	
Isopropylbenzene	1.0E+03	<0.25	
n-Propylbenzene	1.00E+03	<0.25	
1,3,5-Trimethylbenzene	1.00E+03	<0.25	
1,2,4-Trimethylbenzene	1.00E+3	<0.25	
Naphthalene	10000	<0.25	
Acenaphthene	1.0E+04	---	
2-Methylnaphthalene	10000	<0.5	
1,1-Dichloroethane	1000	<0.1	
1,1-Dichloroethene	0.08	<0.1	
1,2-Dichloroethene	0.37	<0.1	
cis-1,2-Dichloroethene	102.49	<0.1	
trans-1,2-Dichloroethene	2.29E+02	<0.1	
1,1,1-Trichloroethane	1000	<0.1	
Chlorobenzene	3.16E+02	<0.1	
Methylene chloride	9.08E+00	<0.1	
Tetrachloroethene	8.01	<0.1	
Trichloroethene	26.73	<0.1	
Vinyl chloride	0.13	<0.1	
1,2-Dichlorobenzene	---		
1,3-Dichlorobenzene	---		
1,4-Dichlorobenzene	---		
Sum of Concentrations	0.00		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
 The following qualifier(s) exist: J, \*, B  
 For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in mg/kg)	SITE	03GP001	03GP001	03GP001	03GP001	03GP002
	SAMPLE ID	03PS0104	03PS0106	03PS0108	03PS0112	03PS0202
DATE	1996 VRP	09/30/96	09/30/96	09/30/96	09/30/96	09/30/96
DEPTH (ft)	Tier II	4.00	6.00	6.00	12.00	2.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	1.1	---	---
2-Methylnaphthalene		10000	<0.5	6.17	20	<0.5
2-Methylphenol		375.93	---	2.3	---	---
4-Methylphenol		427.24	---	1.7	---	---
Acenaphthene		1.0E+04	---	<0.33	---	---
Anthracene		1.00E+04	---	<0.33	---	---
Benzo (a) anthracene		103.8	---	<0.33	---	---
Benzo (b) pyrene		69.85	---	<0.33	---	---
Benzo (b) fluoranthene		354.98	---	<0.33	---	---
Benzo (k) fluoranthene		3759.12	---	<0.33	---	---
Benzo (ghi) perylene		---	---	<0.33	---	---
Bi(2-ethylhexyl) phthalate		1406	---	1.3	---	---
Carbazole		1.00E+04	---	<0.33	---	---
Chrysene		1.00E+04	---	<0.33	---	---
Di-n-butylphthalate		1.00E+04	---	<0.33	---	---
Fluoranthene		10000	---	<0.33	---	---
Fluorene		1.00E+04	---	<0.33	---	---
Naphthalene		10000	<0.26	1.9#	6.7	0.37
Phenanthrene		1.00E+04	---	0.38	---	---
Phenol		659.79	---	0.41	---	---
Pyrene		10000	---	0.34	---	---
<b>Sum of Concentrations</b>			0.00	16.63	26.70	0.37
						0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed

# = Constituent found in more than one test method, highest result reported.

For RCL SVOC

Criteria Comparison 1995 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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 AlliedSignal Industrial Complex  
 South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	03GP002	03GP002	03GP003	03GP003	03GP004
		SAMPLE ID	03PS0208	03PS0212	03PS0304	03PS0306	03PS0402
		DATE	1996 VRP	09/30/96	09/30/96	09/30/96	09/30/96
		DEPTH (ft)	Tier II	8.00	12.00	4.00	6.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol			1.70E +02	---	---	---	---
2-Methylnaphthalene			10000	<0.5	<0.5	<0.5	<0.5
2-Methylphenol			376.93	---	---	---	---
4-Methylphenol			427.24	---	---	---	---
Acenaphthene			1.0E +04	---	---	---	---
Anthracene			1.00E +04	---	---	---	---
Benz(a)anthracene			103.8	---	---	---	---
Benz(b)pyrene			69.85	---	---	---	---
Benz(b)fluoranthene			364.98	---	---	---	---
Benz(k)fluoranthene			3759.12	---	---	---	---
Benz(ghi)perylene			---	---	---	---	---
Bis(2-ethylhexyl) phthalate			1406	---	---	---	---
Carbazole			1.00E +04	---	---	---	---
Chrysene			1.00E +04	---	---	---	---
Di-n-butylphthalate			1.00E +04	---	---	---	---
Fluoranthene			10000	---	---	---	---
Fluorene			1.00E +04	---	---	---	---
Naphthalene			10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene			1.00E +04	---	---	---	---
Phenol			658.78	---	---	---	---
Pyrene			10000	---	---	---	---
Sum of Concentrations			0.00	0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
For RCL SVOC							
Criteria Comparison 1996 VRP Tier II Non-Residential							

**Analytical Summary - SVOCs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
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	SITE	03GP004	03GP004	03GP005	03GP005	03GP005
CONSTITUENT	SAMPLE ID	03PS0408	03PS0410	03PS0504	03PS0506	03PS0512
(Units in mg/kg)	DATE	1996 VRP	09/30/96	09/30/96	10/01/96	10/01/96
	DEPTH (ft)	Tier II	8.00	10.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E +02	<0.33	---	---	---
2-Methylnaphthalene		10000	<0.1#	<0.5	<0.5	<0.5
2-Methylphenol		375.93	<0.33	---	---	---
4-Methylphenol		427.24	<0.33	---	---	---
Acenaphthene		1.0E +04	<0.33	---	---	---
Anthracene		1.00E +04	<0.33	---	---	---
Benz(a)anthracene		103.8	<0.33	---	---	---
Benz(b)pyrene		69.85	<0.33	---	---	---
Benz(b)fluoranthene		354.98	<0.33	---	---	---
Benz(k)fluoranthene		3759.12	<0.33	---	---	---
Benz(g,h)perylene			<0.33	---	---	---
Bis(2-ethylhexyl) phthalate		1406	0.72	---	---	---
Carbazole		1.00E +04	<0.33	---	---	---
Chrysene		1.00E +04	<0.33	---	---	---
Di-n-butylphthalate		1.00E +04	<0.33	---	---	---
Fluoranthene		10000	<0.33	---	---	---
Fluorene		1.00E +04	<0.33	---	---	---
Naphthalene		10000	<0.05#	<0.25	<0.25	<0.25
Phenanthrene		1.00E +04	<0.33	---	---	---
Phenol		659.78	<0.33	---	---	---
Pyrene		10000	<0.33	---	---	---
Sum of Concentrations			0.72	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent with more than one test method, highest result reported.

Analytical Summary - SVOCs in Soils  
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SITE	03GP006	03GP006	03GP006	03GP006	03GP007
SAMPLE ID	03PS0608	03PS0610	03PS0618	03GP00601	03PS0704
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/01/96	10/01/96	11/06/97
	DEPTH (ft)	Tier.II	6.00	10.00	18.00
	RESULT-TYPE	Non-Residential	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E +02	--	--	<0.33
2-Methylnaphthalene		10000	<6	<5	<2
2-Methylphenol		376.93			<0.33
4-Methylphenol		427.24			<0.33
Acenaphthene		1.0E +04	--	--	<0.33
Anthracene		1.00E +04	--	--	<0.33
Benzo (a) anthracene		103.8	--	--	<0.33
Benzo (b) pyrene		69.85			<0.33
Benzo (b) fluoranthene		354.98	--	--	<0.33?
Benzo (k) fluoranthene		3759.12			<0.33?
Benzo (ghi) perylene			--	--	<0.33
Bis (2-ethylhexyl) phthalate		1406			0.59
Carbazole		1.00E +04	--	--	<0.33
Chrysene		1.00E +04	--	--	<0.33
Di-n-butylphthalate		1.00E +04	--	--	0.62
Fluoranthene		10000			<0.33
Fluorene		1.00E +04	--	--	<0.33
Naphthalene		10000	<2.5	<2.5	<1
Phenanthrene		1.00E +04	--	--	<0.33
Phenol		668.78			<0.33
Pyrene		10000	--	--	<0.33
Sum of Concentrations		0.00	0.00	0.00	1.69
					0.34

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. ? = Duplicate records found, Data review required.

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in mg/kg)	SITE	03GP007	03GP007	03GP008	03GP008	03GP008
	SAMPLE ID	03PS0708	03P60714	03PS0802	03P60806	03P60808
	DATE	1996 VRP	10/01/96	10/01/96	10/01/96	10/01/96
	DEPTH (ft)	Tier II	8.00	14.00	2.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---	---
2-Methylnaphthalene		10000	<0.5	0.5	<0.5	<0.5
2-Methylphenol		375.93	---	---	---	---
4-Methylphenol		427.24	---	---	---	---
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benz(a)anthracene		103.8	---	---	---	---
Benz(b)pyrene		69.85	---	---	---	---
Benz(b)fluoranthene		354.98	---	---	---	---
Benz(k)fluoranthene		3759.12	---	---	---	---
Benz(ghi)perylene		---	---	---	---	---
Bis(2-ethylhexyl) phthalate		1406	---	---	---	---
Carbazole		1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Naphthalene		10000	<0.25	0.85	<0.25	<0.25
Phenanthrene		1.00E+04	---	---	---	---
Phenol		658.78	---	---	---	---
Pyrene		10000	---	---	---	---
<b>Sum of Concentrations</b>			0.00	1.36	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

RCL SWC [REDACTED] via Comparison [REDACTED] VRP [REDACTED] I No [REDACTED] [REDACTED]

Analytical Summary - SVOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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CONSTITUENT (Units in mg/kg)	SITE	03GP008	03GP009	03GP009	03GP009	03GP010
	SAMPLE ID	03QD0606	03PS0904	03PS0906	03PS0910	03PS1004
DATE	1996 VRP	10/01/96	10/02/96	10/02/96	10/02/96	10/02/96
DEPTH (ft)	Tier II	8.00	4.00	8.00	10.00	4.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---	---
2-Methylnaphthalene		10000	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol		375.93	---	---	---	---
4-Methylphenol		427.24	---	---	---	---
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benz(a)anthracene		103.8	---	---	---	---
Benz(b)pyrene		69.85	---	---	---	---
Benz(b)fluoranthene		354.98	---	---	---	---
Benz(k)fluoranthene		3769.12	---	---	---	---
Benz(ghi)perylene		---	---	---	---	---
Bis(2-ethylhexyl) phthalate		1406	---	---	---	---
Carbazole		1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Naphthalene		10000	< 0.25	< 0.25	< 0.25	< 0.25
Phenanthrene		1.00E+04	---	---	---	---
Phenol		668.78	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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 Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.

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CONSTITUENT (Units: in mg/kg)	SITE	03GP010	03GP010	03GP011	03GP011	03GP011
	SAMPLE ID	03PS1008	03PS1012	03PS1108	03PS1108	03PS1114
	DATE	1996 VRP	10/02/96	10/02/96	10/02/96	10/02/96
	DEPTH (ft)	Tier II	6.00	12.00	6.00	8.00
	RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E + 02	---	---	<0.33	---
2-Methylnaphthalene		10000	<0.6	<0.6	7	<0.17
2-Methylphenol		376.93	---	---	---	<0.33
4-Methylphenol		427.24	---	---	---	<0.33
Acenaphthene		1.0E + 04	---	---	---	<0.33
Anthracene		1.00E + 04	---	---	---	<0.33
Benzo (a) anthracene		103.8	---	---	---	<0.33
Benzo (b) pyrene		69.85	---	---	---	<0.33
Benzo (b) fluoranthene		354.98	---	---	---	<0.33
Benzo (k) fluoranthene		3759.12	---	---	---	<0.33
Benzo (ghi) perylene		---	---	---	<0.33	---
Bis (2-ethylhexyl) phthalate		1406	---	---	0.6	---
Carbazole		1.00E + 04	---	---	<0.33	---
Chrysene		1.00E + 04	---	---	---	<0.33
Di-n-butylphthalate		1.00E + 04	---	---	<0.33	---
Fluoranthene		10000	---	---	---	<0.33
Fluorene		1.00E + 04	---	---	<0.33	---
Naphthalene		10000	<0.25	<0.25	1.3	<0.05#
Phenanthrene		1.00E + 04	---	---	---	<0.33
Phenol		658.78	---	---	---	<0.33
Pyrene		10000	---	---	<0.33	---
Sum of Concentrations		0.00	0.00	8.30	0.60	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL SVCA

Indiana Commission 1996 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
 Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
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SITE	03GP011	03GP012	03GP012	03GP012	03GP012
SAMPLE ID	03PS1122	03PS1208	03PS1218	03PS1220	03GP1201
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/02/96	10/02/96	10/02/96
DEPTH (ft)	Tier II	22.00	8.00	16.00	20.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02			<0.33
2-Methylnaphthalene		10000	<0.5	<0.5	<1
2-Methylphenol		376.93	---	---	<0.33
4-Methylphenol		427.24			0.60
Acenaphthene		1.0E+04	---		<0.33
Anthracene		1.00E+04			0.34
Benzo (a) anthracene		103.8	---		1.2
Benzo (b) pyrene		69.85	---		0.41
Benzo (b) fluoranthene		354.98	---		0.90?
Benzo (k) fluoranthene		3769.12	---		<0.33?
Benzo (ghi) perylene		---	---	---	<0.33
Bis(2-ethylhexyl) phthalate		1406	---		4.0
Carbazole		1.00E+04	---	---	<0.33
Chrysene		1.00E+04	---		1.1
Di-n-butylphthalate		1.00E+04	---	---	<0.33
Fluorenthene		10000	---		1.6
Fluorene		1.00E+04	---	---	<0.33
Naphthalene		10000	<0.25	<0.25	<0.6
Phenanthrene		1.00E+04	---	---	1.1
Phenol		658.78	---		<0.33
Pyrene		10000	---	---	2.9
Sum of Concentrations		0.00	0.00	0.00	0.00
					14.76
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
# = Constituent in more than one test method, highest result reported. ? = Duplicate records found, Data review required.					
For RCL SVOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

Analytical Summary - SVOCs in Soils  
 Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.  
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SITE	03GP013	03GP013	03GP013	03GP014	03GP014
SAMPLE ID	03PS1308	03PS1312	03PS1318	03PS01404	03PS01408
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/02/96	10/02/96	10/03/96
	DEPTH (ft)	Tier II	8.00	12.00	18.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	ND
2-Methylnaphthalene		10000	<0.5	<5.2	<1.1
2-Methylphenol		375.93	---	---	ND
4-Methylphenol		427.24	---	---	ND
Acenaphthene		1.0E+04	---	---	ND
Anthracene		1.00E+04	---	---	ND
Benz(a)anthracene		103.8	---	---	ND
Benz(b)pyrene		69.85	---	---	ND
Benz(b)fluoranthene		354.98	---	---	<0.33?
Benz(k)fluoranthene		3759.12	---	---	<0.33?
Benzo(ghi)perylene		---	---	---	ND
Bis(2-ethylhexyl) phthalate		1406	---	---	ND
Carbazole		1.00E+04	---	---	ND
Chrysene		1.00E+04	---	---	ND
Di-n-butylphthalate		1.00E+04	---	---	ND
Fluoranthene		10000	---	---	ND
Fluorene		1.00E+04	---	---	ND
Naphthalene		10000	<0.25	<2.6	<0.65
Phenanthrene		1.00E+04	---	---	ND
Phenol		658.78	---	---	ND
Pyrene		10000	---	---	ND
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. ? = Duplicate record found, Data review required. ND = Not Detected

For RCL SVOC

**Analytical Summary - SVOCs in Soils**  
**Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.**  
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. ? = Duplicate records found, Data review required.

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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 AlliedSignal Industrial Complex  
 South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	03GP015	03GP015	03GP015	03GP015	03GP015
	SAMPLE ID	03PS01514	03QD01514	03PS01518	03PS01520	03GP01501
	DATE	1996 VRP	10/03/96	10/03/96	10/03/96	10/03/96
	DEPTH (ft)	Tier II	14.00	14.00	18.00	20.00
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---	<0.33
2-Methylnaphthalene		10000	<1.2*	<0.5	<1.2	<2.6#
2-Methylphenol		376.93	---	---	---	<0.33
4-Methylphenol		427.24	---	---	---	<0.33
Acenaphthene		1.0E+04	---	---	---	<0.33
Anthracene		1.00E+04	---	---	---	<0.33
Benz(a)anthracene		103.8	---	---	---	<0.33
Benz(b)pyrene		69.85	---	---	---	<0.33
Benz(b)fluoranthene		354.98	---	---	---	<0.33?
Benz(k)fluoranthene		3769.12	---	---	---	<0.33?
Benzo(ghi)perylene		---	---	---	---	<0.33
Bis(2-ethylhexyl)phthalate		1406	---	---	---	<0.33
Carbazole		1.00E+04	---	---	---	<0.33
Chrysene		1.00E+04	---	---	---	<0.33
Di-n-butylphthalate		1.00E+04	---	---	---	0.67
Fluoranthene		10000	---	---	---	<0.33
Fluorene		1.00E+04	---	---	---	<0.33
Naphthalene		10000	<0.6*	<0.26	<0.62	<1.2
Phenanthrene		1.00E+04	---	---	---	<0.33
Phenol		658.78	---	---	---	<0.33
Pyrene		10000	---	---	---	<0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.67

Values represent total concentrations unless noted \* = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent is more than one test method, highest result reported. ? = Duplicate record found, Data review required.

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
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CONSTITUENT (Units in mg/kg)	SITE	03GP016	03GP016	03GP016	03GP017	03GP017
	SAMPLE ID	03PS01604	03PS01608	03PS01614	03PS01708	03PS01712
	DATE	1996 VRP	10/03/96	10/03/96	10/03/96	10/04/96
	DEPTH (ft)	Tier II	4.00	8.00	14.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2,4-Dimethylphenol	1.70E+02	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<1.2	<1.2	<0.6	<0.5
2-Methylphenol	376.93	---	---	---	---	---
4-Methylphenol	427.24	---	---	---	---	---
Acenaphthene	1.0E+04	---	---	---	---	---
Anthracene	1.00E+04	---	---	---	---	---
Benzo (a) anthracene	103.8	---	---	---	---	---
Benzo (b) pyrene	69.85	---	---	---	---	---
Benzo (b) fluoranthene	354.98	---	---	---	---	---
Benzo (k) fluoranthene	3769.12	---	---	---	---	---
Benzo (g,h,i) perylene	---	---	---	---	---	---
Bis(2-ethylhexyl) phthalate	1406	---	---	---	---	---
Carbazole	1.00E+04	---	---	---	---	---
Chrysene	1.00E+04	---	---	---	---	---
Di-n-butylphthalate	1.00E+04	---	---	---	---	---
Fluoranthene	10000	---	---	---	---	---
Fluorene	1.00E+04	---	---	---	---	---
Naphthalene	10000	<0.25	<0.62	<0.6	<0.26	<0.26
Phenanthrene	1.00E+04	---	---	---	---	---
Phenol	668.78	---	---	---	---	---
Pyrene	10000	---	---	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
 Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.  
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 AlliedSignal Industrial Complex  
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SITE	03GP017	03GP017	03GP018	03GP018	03GP019
SAMPLE ID	03QD01712	03PS01715	03PS01808	03PS01812	03PS01904
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/04/96	10/04/96	10/25/96
DEPTH (ft)	Tier II	12.00	16.00	8.00	12.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---
2-Methylnaphthalene	10000	<0.5	24	<0.5	<0.5
2-Methylphenol	376.83	---	---	---	---
4-Methylphenol		427.24	---	---	---
Acenaphthene		1.0E+04	---	---	---
Anthracene		1.00E+04	---	---	---
Benz(a)anthracene	103.8	---	---	---	---
Benz(b)pyrene	69.85	---	---	---	---
Benz(b)fluoranthene	354.98	---	---	---	---
Benz(k)fluoranthene	3759.12	---	---	---	---
Benz(ghi)perylene		---	---	---	---
Bis(2-ethylhexyl)phthalate	1406	---	---	---	---
Carbazole	1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---
Fluoranthene	10000	---	---	---	---
Fluorene		1.00E+04	---	---	---
Naphthalene	10000	<0.25	9	<0.25	<0.25
Phenanthrene		1.00E+04	---	---	---
Phenol	658.78	---	---	---	---
Pyrene	10000	---	---	---	---
Sum of Concentrations		0.00	33.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP-Tier II Non-Residential

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CONSTITUENT	SITE	03GP019	03GP019	03GP020	03GP020	03GP020
	SAMPLE ID	03PS01908	03PS01912	03PS02004	03PS02008	03PS02014
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/28/96	10/28/96	10/28/96	10/28/96
	DEPTH (ft)	Tier II	8.00	12.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E +02	---	---	---	---
2-Methylnaphthalene		10000	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol		375.93	---	---	---	---
4-Methylphenol		427.24	---	---	---	---
Acenaphthene		1.0E +04	---	---	---	---
Anthracene		1.00E +04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Bis (2-ethylhexyl) phthalate		1408	---	---	---	---
Carbazole		1.00E +04	---	---	---	---
Chrysene		1.00E +04	---	---	---	---
Di-n-butylphthalate		1.00E +04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E +04	---	---	---	---
Naphthalene		10000	< 0.25	< 0.25	< 0.25	< 0.25
Phenanthrene		1.00E +04	---	---	---	---
Phenol		655.78	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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CONSTITUENT	UNITS IN mg/kg	SITE	03GP021	03GP021	03GP022	03GP022	03GP022
		SAMPLE ID	03P602104	03P602108	03P602204	03P602208	03P602212
DATE		DEPTH (ft)	1996 VRP	10/28/96	10/28/96	10/28/96	10/28/96
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
2,4-Dimethylphenol			1.70E + 02	---	---	---	---
2-Methylnaphthalene			10000	<0.5	<0.5	<0.5	<0.5
2-Methylphenol			375.93	---	---	---	---
4-Methylphenol			427.24	---	---	---	---
Acenaphthene			1.0E + 04	---	---	---	---
Anthracene			1.00E + 04	---	---	---	---
Benzo (a) anthracene			103.8	---	---	---	---
Benzo (b) pyrene			69.85	---	---	---	---
Benzo (b) fluoranthene			354.98	---	---	---	---
Benzo (k) fluoranthene			3759.12	---	---	---	---
Benzo (g,h) perylene			---	---	---	---	---
Bis (2-ethylhexyl) phthalate			1406	---	---	---	---
Carbazole			1.00E + 04	---	---	---	---
Chrysene			1.00E + 04	---	---	---	---
Di-n-butylphthalate			1.00E + 04	---	---	---	---
Fluoranthene			10000	---	---	---	---
Fluorene			1.00E + 04	---	---	---	---
Naphthalene			10000	<0.25	<0.25	<0.26	<0.26
Phenanthrene			1.00E + 04	---	---	---	---
Phenol			658.78	---	---	---	---
Pyrene			10000	---	---	---	---
Sum of Concentrations			0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Method Comparison 100% VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
 Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
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SITE	03GP022	08GP004	08GP004	08GP004	11GP001
SAMPLE ID	03QD02212	08PS00408	08PS00412	08PS00416	11PS00104
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/26/96	10/08/96	10/08/96
	DEPTH (ft)	Tier II	12.00	8.00	12.00
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5
2-Methylphenol		375.93	---	---	---
4-Methylphenol		427.24	---	---	---
Acenaphthene		1.0E+04	---	---	---
Anthracene		1.00E+04	---	---	---
Benz(a)anthracene		103.8	---	---	---
Benz(b)pyrene		69.86	---	---	---
Benz(b)fluoranthene		354.88	---	---	---
Benz(k)fluoranthene		3759.12	---	---	---
Benz(ghi)perylene		---	---	---	---
Bis(2-ethylhexyl) phthalate		1406	---	---	---
Carbazole		1.00E+04	---	---	---
Chrysene		1.00E+04	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---
Fluorenthene		10000	---	---	---
Fluorene		1.00E+04	---	---	---
Naphthalene		10000	<0.25	<0.26	<0.25
Phanthrene		1.00E+04	---	---	---
Phenol		658.78	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - SVOCs in Soils  
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CONSTITUENT	SITE	11GP001	11GP002	11GP002	11GP003	11GP003
	SAMPLE ID	11PS00108	11PS00204	11PS00208	11PS00304	11PS00308
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/03/96	10/03/96	10/03/96	10/04/96
	DEPTH (ft)	Tier II	8.00	4.00	8.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---	---
2-Methylnaphthalene		10000	<0.5	<1.1	<0.5	<0.5
2-Methylphenol		376.93	---	---	---	---
4-Methylphenol		427.24	---	---	---	---
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (k) fluoranthene		3758.12	---	---	---	---
Benzo (g,h,i) perylene		---	---	---	---	---
Bis (2-ethylhexyl) phthalate		1406	---	---	---	---
Carbazole		1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Naphthalene		10000	<0.25	<0.53	<0.26	<0.26
Phenanthrene		1.00E+04	---	---	---	---
Phenol		658.78	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		8,159.50	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Indiana Commission 100% VRP Tier II Non-Resident

Analytical Summary - SVOCs in Soils  
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CONSTITUENT	SITE	11GP003	11GP004	11GP004	11GP005	11GP005
	SAMPLE ID	11PS00312	11PS00404	11PS00409	11PS00504	11PS00508
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/04/96	10/04/96	10/04/96	10/04/96
	DEPTH (ft)	Tier II	12.00	4.00	9.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E +02	---	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
2-Methylphenol		376.93				
4-Methylphenol		427.24				
Acenaphthene		1.0E +04				
Anthracene		1.00E +04				
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) Fluoranthene		354.98	---	---	---	---
Benzo (K) fluoranthene		3759.12				
Benzo (ghi) perylene			---	---	---	---
Bis (2-ethylhexyl) phthalate		1406	---	---	---	---
Carbazole		1.00E +04	---	---	---	---
Chrysene		1.00E +04	---	---	---	---
Di-n-butylphthalate		1.00E +04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E +04	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E +04	---	---	---	---
Phenol		658.78	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations			0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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 Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.  
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CONSTITUENT (Units in mg/kg)	SITE	11GP005	11GP006	11GP006	11GP006	11GP007
	SAMPLE ID	11PS00612	11PS00604	11PS00608	11PS00612	11PS00708
DATE	1996 VRP	10/04/96	10/04/96	10/04/96	10/04/96	10/05/96
DEPTH (ft)	Tier II	12.00	4.00	8.00	12.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02			---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
2-Methylphenol		375.93	---	---	---	---
4-Methylphenol		427.24	---	---	---	---
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Benzo (ghi) perylene		1406.	---	---	---	---
Bis (2-ethylhexyl) phthalate		1.00E+04	---	---	---	---
Carbazole		1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E+04	---	---	---	---
Phenol		668.78	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed

For RCL SV6

Criteria Comparison-1996 VRP-Tier II-Non-Residential

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CONSTITUENT (Units in mg/kg)	SITE	11GP007	11GP007	11GP008	11GP008	11GP008
	SAMPLE ID	11PS00712	11PS00715	11PS00804	11PS00808	11PS00812
	DATE	1996 VRP	10/05/96	10/05/96	10/16/96	10/16/96
	DEPTH (ft)	Tier II	12.00	15.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---	---
2-Methylnaphthalene		10000	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylphenol		376.93	---	---	---	---
4-Methylphenol		427.24	---	---	---	---
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (k) fluoranthene		3769.12	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Bis (2-ethylhexyl) phthalate		1406	---	---	---	---
Carbazole		1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Naphthalene		10000	< 0.25	< 0.25	< 0.25	< 0.25
Phenanthrene		1.00E+04	---	---	---	---
Phenol		658.78	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison- 1996 VRP Tier II- Non-Residential

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CONSTITUENT	SITE	11GP009	11GP009	11GP009	11GP010	11GP010
		SAMPLE ID	11PS00904	11PS00910	11PS00912	11PS01004
CONSTITUENT	DATE	1996 VRP	11/13/96	11/13/96	11/13/96	12/17/96
	DEPTH (ft)	Tier II	4.00	10.00	12.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2,4-Dimethylphenol		1.70E+02	---	---	---	---
2-Methylnaphthalene		10000	<0.6	<0.6	<0.6	<0.6
2-Methylphenol		375.93				
4-Methylphenol		427.24				
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Benzo (ghi) perylene			---	---	---	---
Bis (2-ethylhexyl) phthalate		1408	---	---	---	---
Carbazole		1.00E+04	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Di-n-butylphthalate		1.00E+04	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E+04	---	---	---	---
Phenol		658.78	---	---	---	---
Pyrene		10000	---	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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SITE	11GP010		
SAMPLE ID	11PS01012		
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	12/17/96
	DEPTH (ft)	Tier II	12.00
	RESULT-TYPE	Non-Residential	Primary
2,4-Dimethylphenol		1.70E +02	--
2-Methylnaphthalene		10000	<0.5
2-Methylphenol		376.93	--
4-Methylphenol		427.24	--
Acenaphthene		1.0E +04	--
Anthracene		1.00E +04	--
Benzo (a) anthracene		103.8	--
Benzo (b) pyrene		69.85	--
Benzo (b) fluoranthene		364.98	--
Benzo (k) fluoranthene		3759.12	--
Benzo (ghi) perylene		--	--
Bis(2-ethylhexyl) phthalate		1406	--
Carbazole		1.00E +04	--
Chrysene		1.00E +04	--
Di-n-butylphthalate		1.00E +04	--
Fluoranthene		10000	--
Fluorene		1.00E +04	--
Naphthalene		10000	<0.25
Phenanthrene		1.00E +04	--
Phenol		658.78	--
Pyrene		10000	--
Sum of Concentrations		0.00	
  Values represent total concentrations unless noted < =Not detected at indicated reporting limit ... = Not analyzed			
The following qualifier(s) exist: *			
For RCL SVOC	Criteria Comparison 1996 VRP Tier II Non-Residential		

## Analytical Summary - TPH/DROs in Soils

Date: 10/25/99

## Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
<b>1996 VRPTier II Non-Residential</b>				
03GP001	09/30/96	4.00	Prim	[6400] PI
03GP001	09/30/96	8.00	Prim	[6000] PI
03GP001	09/30/96	12.00	Prim	58
03GP002	09/30/96	2.00	Prim	157 PI
03GP002	09/30/96	8.00	Prim	<10
03GP002	09/30/96	12.00	Prim	<10
03GP003	09/30/96	4.00	Prim	13
03GP003	09/30/96	6.00	Prim	<10
03GP004	09/30/96	2.00	Prim	3300 PI
03GP004	09/30/96	10.00	Prim	3100 PI
03GP005	10/01/96	4.00	Prim	<10
03GP005	10/01/96	8.00	Prim	<10
03GP005	10/01/96	12.00	Prim	<10
03GP006	10/01/96	6.00	Prim	3800 PI
03GP006	10/01/96	10.00	Prim	29
03GP006	10/01/96	18.00	Prim	1100 PI
03GP007	10/01/96	4.00	Prim	12
03GP007	10/01/96	8.00	Prim	<10
03GP007	10/01/96	14.00	Prim	[6700] PI
03GP008	10/01/96	2.00	Prim	270 PI
03GP008	10/01/96	6.00	Prim	<10
03GP008	10/01/96	8.00	Prim	<10
03GP008	10/01/96	8.00	Dup 1	<10
03GP009	10/02/96	4.00	Prim	<10
03GP009	10/02/96	8.00	Prim	<10
03GP009	10/02/96	10.00	Prim	<10
03GP010	10/02/96	4.00	Prim	<10
03GP010	10/02/96	6.00	Prim	<10
03GP010	10/02/96	12.00	Prim	<10
03GP011	10/02/96	6.00	Prim	770 PI
03GP011	10/02/96	14.00	Prim	250 PI
03GP011	10/02/96	22.00	Prim	190 PI
03GP012	10/02/96	8.00	Prim	5500 PI

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - TPH/DROs in Soils  
Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.

Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO	
				(mg/kg)	
<b>1996 VRPTier II Non-Residential</b>					6000
03GP012	10/02/96	16.00	Prim	<10	
03GP012	10/02/96	20.00	Prim	<10	
03GP013	10/02/96	8.00	Prim	<10	
03GP013	10/02/96	12.00	Prim	<10	
03GP013	10/02/96	18.00	Prim	<10	
03GP014	10/03/96	8.00	Prim	360 PI	
03GP014	10/03/96	12.00	Prim	890 PI	
03GP014	10/03/96	16.00	Prim	24	
03GP015	10/03/96	8.00	Prim	24	
03GP015	10/03/96	12.00	Prim	<10	
03GP015	10/03/96	14.00	Prim	28	
03GP015	10/03/96	14.00	Dup 1	<10	
03GP016	10/03/96	4.00	Prim	10	
03GP016	10/03/96	8.00	Prim	11	
03GP016	10/03/96	14.00	Prim	<10	
03GP017	10/04/96	8.00	Prim	22	
03GP017	10/04/96	12.00	Prim	44	
03GP017	10/04/96	12.00	Dup 1	540	
03GP017	10/04/96	15.00	Prim	73	
03GP018	10/25/96	8.00	Prim	<10	
03GP018	10/25/96	12.00	Prim	<10	
03GP019	10/28/96	4.00	Prim	36	
03GP019	10/28/96	8.00	Prim	<10	
03GP019	10/28/96	12.00	Prim	<10	
03GP020	10/28/96	4.00	Prim	74	
03GP020	10/28/96	8.00	Prim	<10	
03GP020	10/28/96	14.00	Prim	24	
03GP021	10/28/96	4.00	Prim	14	
03GP021	10/28/96	8.00	Prim	22	
03GP022	10/28/96	4.00	Prim	<10	
03GP022	10/28/96	8.00	Prim	<10	
03GP022	10/28/96	12.00	Prim	<10	
03GP022	10/28/96	12.00	Dup 1	<10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
08GP004	10/08/96	8.00	Prim	<10
08GP004	10/08/96	12.00	Prim	<10
08GP004	10/08/96	16.00	Prim	<10
11GP001	10/03/96	4.00	Prim	<10
11GP001	10/03/96	8.00	Prim	<10
11GP002	10/03/96	4.00	Prim	<10
11GP002	10/03/96	8.00	Prim	<10
11GP003	10/04/96	4.00	Prim	<10
11GP003	10/04/96	8.00	Prim	<10
11GP003	10/04/96	12.00	Prim	<10
11GP004	10/04/96	4.00	Prim	<10
11GP004	10/04/96	9.00	Prim	<10
11GP005	10/04/96	4.00	Prim	<10
11GP005	10/04/96	8.00	Prim	<10
11GP005	10/04/96	12.00	Prim	<10
11GP006	10/04/96	4.00	Prim	<10
11GP006	10/04/96	8.00	Prim	17
11GP006	10/04/96	12.00	Prim	<10
11GP007	10/05/96	8.00	Prim	<10
11GP007	10/05/96	12.00	Prim	<10
11GP007	10/05/96	15.00	Prim	740
11GP008	10/16/96	4.00	Prim	<10
11GP008	10/16/96	8.00	Prim	<10
11GP008	10/16/96	12.00	Prim	<10
11GP009	11/13/96	4.00	Prim	15
11GP009	11/13/96	10.00	Prim	12
11GP009	11/13/96	12.00	Prim	<10
11GP010	12/17/96	4.00	Prim	<10
11GP010	12/17/96	8.00	Prim	<10
11GP010	12/17/96	12.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: P, I, J

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - PCBs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
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**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

South Bend, Indiana							
	SITE	03GP001	03GP004	03GP006	03GP011	03GP012	
	SAMPLE ID	03PS0106	03PS0408	03GP00801	03PS1108	03GP01201	
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	09/30/96	09/30/96	11/06/97	10/02/98
	DEPTH (ft)	Tier II	6.00	8.00	1.00	8.00	1.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
PCB-1264		3.05E+00	< 9.6 PL	< 0.33	2.9	< 0.33	[12]
PCB-1248		1.28E+00	[260] PL	[1.5]	[5.0]	< 0.33	[36]
Sum of Concentrations		260.00	1.50	7.90	0.00	48.00	

**Analytical Summary - PCBs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**

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## **Voluntary Site Investigation**

#### AlliedSignal Industrial Complex

## **South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	03GP014	03GP014	03GP014	03GP015	03GP016
	SAMPLE ID	03PS01404	03PS01401	03GP014	03GP01501	03GP01501
	DATE	1996 VRP	10/03/96	07/17/97	11/06/97	07/17/97
	DEPTH (ft)	Tier II	4.00	1.00	1.00	1.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
PCB-1254		3.05E +00	0.97	<0.33	<0.33	<0.33
PCB-1248		1.28E +00	0.73	13.91	<0.33	<0.33
Sum of Concentrations		1.70	3.80	0.00	0.00	0.00

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[ ] = Greater than Action Level

15-sec RCL RCS

**Analytical Summary - PCBs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**

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#### AlliedSignal Industrial Complex

## **Amesignal Industrial Complex**

**SOUTH BEND, INDIANA**

CONSTITUENT (Units in mg/kg)	SITE	03GP042	03GP043	03GP044	03GP044	03GP044
	SAMPLE ID	03PS04204	03PS04304	03PS04402	03PS04401	03PS04401
	DATE	1996 VRP	06/07/97	06/07/97	06/07/97	07/14/97
DEPTH (ft)	Tier II	4.00	4.00	2.00	1.00	1.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
PCB-1254		3.06E +00	< 0.33	< 0.33	< 0.33	< 0.40
PCB-1248		1.28E +00	[240]	[2.8]	[115]	[6.4]
Sum of Concentrations		240.00	2.80	15.00	6.40	9.10

**Analytical Summary - PCBs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**  
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**South Bend, Indiana**

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**Values represent total concentrations unless noted** < = Not detected at indicated reporting limit    --- = Not analyzed

[ ] = Greater Action Level

For RCL PCR

Criteria Comparison, 1998 VRP Tier II Non-Residential

**Analytical Summary - PCBs in Soils  
Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.  
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South Bend, Indiana**

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South Bend, Indiana						
	SITE	03GP049	03GP050	03GP050	03GP051	03GP051
	SAMPLE ID	03PS04910	03PS05002	03PS05001	03PS05104	03PS05101
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	06/07/97	06/07/97	07/14/97
	DEPTH (ft)	Tier II	10.00	2.00	1.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
PCB-1254		3.05E +00	<0.33	<0.33	<0.46	<0.33
PCB-1248		1.285E +00	<0.33	16.41	[9.0]	<0.33
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>5.40</b>	<b>9.00</b>	<b>0.00</b>	<b>8.93</b>

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[ ] = Greater than Action Level

For RCL PCB

## Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - PCBs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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South Bend, Indiana						
	SITE	03GP052	03HA053	03HA054	03HA055	03HA056
	SAMPLE ID	03PS05206	05PS05301	03PS05401	05PS05501	03PS05601
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	06/07/97	07/14/97	07/14/97	07/17/97
	DEPTH (ft)	Tier II	6.00	1.00	1.00	1.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
PCB-1264		3.05E+00	<0.33	<6.30	<0.36	<0.33
PCB-1268		1.26E+00	<0.33	(96)	(4.9)	<0.33
Sum of Concentrations		0.00	96.00	4.90	0.00	8.10

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= Greater Action Level

RCL

**Analytical Summary - PCBs in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana			
CONSTITUENT (Units in mg/kg)	SITE	SAMPLE ID	
	DATE	1996 VRP	07/17/97
	DEPTH (ft)	Tier II	1.00
	RESULT TYPE	Non-Residential	Duplicate 1 Primary
PCB-1254		3.05E+00	<0.96
PCB-1248		1.28E+00	[18]
<b>Sum of Concentrations</b>		<b>18.00</b>	<b>0.00</b>

**Analytical Summary - Inorganics in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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South Bend, Indiana						
	SITE	03GP001	03GP001	03GP001	03GP001	03GP002
	SAMPLE ID	03PS0104	03PS0106	03PS0108	03PS0112	03PS0202
CONSTITUENT	(Units in mg/kg)	DATE	1998 VRP	09/30/98	09/30/98	09/30/98
	DEPTH (ft)	Tier-II	4.00	6.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	7.2	3.8 J	1.4	1.6
Barium, Total		10000	119	24	8.8	3.8
Cadmium, Total		730.0	<1	<1	<1	<1
Chromium, Total			10	12	<5	<5
Copper, Total		1700	14	11	3.8	3.8
Lead, Total		400	19	8.9	<5	<5
Mercury, Total		87.60	0.16	<0.1	<0.1	<0.1
Nickel, Total		10000	13	13	8.2	2.3
Selenium, Total		7300	0.77	<0.5 J	0.51	<0.5
Silver, Total		7300	1.2	2.4	<1	<1
Zinc, Total		10000	77	38	16	13
Cyanide, total		10000		<0.5		
Sum of Concentrations		261.32	111.10	35.81	24.20	206.20

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

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Analytical Summary - Inorganics in Soils  
 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	03GP002	03GP002	03GP003	03GP003	03GP004
	SAMPLE ID	03PS0208	03PS0212	03PS0304	03PS0306	03PS0402
	DATE	1996 VRP	09/30/96	09/30/96	09/30/96	09/30/96
	DEPTH (ft)	Tier II	8.00	12.00	4.00	6.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	4	1	2.7	1.3	6.8
Barium, Total	10000	14	6.3	16	4.2	41
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		5.7	<5	5.5	<5	10
Copper, Total	1700	8.2	2.9	11	3	15
Lead, Total	400	<6	<6	6	<6	26
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	4.9	3.9	7.3	2.4	5.1
Selenium, Total	7300	<0.6	<0.5	<0.5	<0.5	1
Silver, Total	7300	<1	<1	<1	<1	3.2
Zinc, Total	10000	10	11	26	12	31
Cyanide, total	10000	---	---	---	---	---
Sum of Concentrations		46.80	24.10	73.50	22.90	139.10

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For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Soils  
 Area 3/11-Alleged Former Disposal Area/Carbon Brake Exp.

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Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

CONSTITUENT (Units: in mg/kg)	DATE	SITE	03GP004	03GP004	03GP005	03GP005	03GP005
		SAMPLE ID	03PS0408	03PS0410	03PS0504	03PS0508	03PS0512
DEPTH (ft)	Tier: II	8.00	10.00	4.00	8.00	12.00	
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	4	1.7	2.8	3.3	1.6
Barium, Total		10000	8.6	5.6	13	39	4
Cadmium, Total		730.0	<1	1.4	<1	1.8	<1
Chromium, Total			<5	<5	<5	7.0	<5
Copper, Total		1700	13	9.5	3	9.6	3.6
Lead, Total		400	<5	<5	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	6.4	6.6	2.2	28	3.4
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	1.3	1.4	<1
Zinc, Total		10000	19	37	7.4	154	20
Cyanide, total		10000	<0.5	---	---	---	---
Sum of Concentrations			50.90	60.70	29.70	244.70	32.50

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**

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#### **AlliedSignal Industrial Complex**

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units: in mg/kg)	SITE	03GP006	03GP006	03GP006	03GP006	03GP007
	SAMPLE ID	03PS0606	03PS0610	03PS0618	03GP00801	03PS0704
	DEPTH (ft)	Tier II	8.00	10.00	18.00	1.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	2.8	1.1	2	3.5	1.4
Barium, Total	10000	29	6.4	36	61	28
Cadmium, Total	730.0	<1	<1	<1	1.9	<1
Chromium, Total		<5	8.3	13	28	6.6
Copper, Total	1700	18	7.4	11	35	6.9
Lead, Total	400	<5	<6	6.4	36	6.1
Mercury, Total	87.60	<0.1	<0.1	<0.1	0.26	<0.1
Nickel, Total	10000	3.6	6.2	12	12	6.2
Selenium, Total	7300	0.75	<0.6	<0.5	<0.5?	<0.5
Silver, Total	7300	2.3	1.7	1.8	<1?	1.1
Zinc, Total	10000	12	17	45	63?	18
Cyanide, Total	10000	...	...	...	<0.5?	...
<b>Sum of Concentrations</b>		<b>68.45</b>	<b>47.10</b>	<b>127.20</b>	<b>238.86</b>	<b>71.20</b>

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

? = Duplicate records found. Data review required.

EPR BCL INORG

Criteria Comparison 1996 VBP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils

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Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	CITE	03GP007	03GP007	03GP008	03GP008	03GP008
	SAMPLE ID	03PS0708	03PS0714	03PS0802	03PS0806	03PS0808
DATE	1996 VRP	10/01/96	10/01/96	10/01/96	10/01/96	10/01/96
DEPTH (ft)	Tier II	8.00	14.00	2.00	6.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	1	1.9	4.6	0.78	0.55
Barium, Total	10000	5.1	8.1	30	4.3	4.7
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<6	9	53	<5	<5
Copper, Total	1700	5.7	6	15	3.8	2.9
Lead, Total	400	<6	<6	27	<6	<6
Mercury, Total	87.60	<0.1	<0.1	0.16	<0.1	<0.1
Nickel, Total	10000	4.3	4.6	7.2	7.2	12
Selenium, Total	7300	<0.5	<0.6	<0.5	<0.5	<0.5
Silver, Total	7300	<1	1.1	1.4	<1	<1
Zinc, Total	10000	17	20	41	53	29
Cyanide, total	10000			...	...	...
Sum of Concentrations		33.10	50.60	179.28	69.16	49.15

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit ... =Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
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**Voluntary Site Investigation**

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#### AlliedSignal Industrial Complex

**South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	03GP008	03GP009	03GP009	03GP009	03GP010
	SAMPLE ID	03GD0808	03P50904	03P50908	03P50910	03P51004
	DATE	1998 VRP	10/01/96	10/02/96	10/02/96	10/02/96
DEPTH (ft)	Tier II	8.00	4.00	8.00	10.00	4.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.52	0.75	1.7	4	0.82
Barium, Total	10000	4.3	4.3	4.8	61	4.1
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	12	<5
Copper, Total	1700	2.6	3.7	3.8	23	3.1
Lead, Total	400	<5	<5	<5	8	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	16	3.7	2.7	19	2.6
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	44	9.8	12	52	9.1
Cyanide, Total	10000	---	---	---	---	---
Sum of Concentrations		67.42	22.25	26.00	179.00	19.72

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Soils  
Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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### AlliedSignal Industrial Complex

## South Bend, Indiana

03GP010 0

	SITE	03GP010	03GP010	03GP011	03GP011	03GP011
	SAMPLE ID	03PS1006	03PS1012	03PS1106	03PS1108	03PS1114
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	10/02/96	10/02/96	10/02/96
	DEPTH (ft)	Tier II	6.00	12.00	6.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.65	4.9	4.1	5.8
Barium, Total		10000	3.3	7.7	42	21
Cadmium, Total		730.0	<1	<1	<1	<1
Chromium, Total			<5	<6	17	7.2
Copper, Total		1700	2.4	3.6	22	6.8
Lead, Total		400	<5	<5	18	13
Mercury, Total		87.60	<0.1	<0.1	0.2	<0.1
Nickel, Total		10000	1.9	3	8.5	3.5
Selenium, Total		7300	<0.5	<0.5	<0.5	0.57
Silver, Total		7300	<1	<1	<1	<1
Zinc, Total		10000	7.3	10	37	14
Cyanide, Total		10000				<0.5
Sum of Concentrations			16.66	29.20	148.80	74.47
						72.20

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

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Criteria Comparison 1998 VRP Tier II Non-Resident

**Analytical Summary - Inorganics in Soils  
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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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South Bend, Indiana						
CONSTITUENT (Units in mg/kg)	SITE	03GP011	03GP012	03GP012	03GP012	03GP012
	SAMPLE ID	03PS1122	03PS1208	03PS1218	03PS1220	03GP01201
	DATE	1996 VRP	10/02/96	10/02/96	10/02/96	10/02/96
DEPTH (ft)	Tier II	22.00	8.00	16.00	20.00	1.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	3.2	5.6	1.4	1.9	16
Barium, Total	10000	12	72	5.3	11	71
Cadmium, Total	730.0	<1	<1	<1	<1	5.4
Chromium, Total		13	18	<6	31	44
Copper, Total	1700	7.6	30	4.1	4.8	42
Lead, Total	400	<5	79	<5	<5	79
Mercury, Total	87.60	<0.1	0.15	<0.1	<0.1	0.64
Nickel, Total	10000	12	9.5	3.9	3.6	16
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.57
Silver, Total	7300	<1	<1	<1	<1	<17
Zinc, Total	10000	45	71	12	15	1457
Cyanide, total	10000	---	---	---	---	0.867
<b>Sum of Concentrations</b>		<b>92.80</b>	<b>285.25</b>	<b>26.70</b>	<b>67.30</b>	<b>417.80</b>

**Analytical Summary - Inorganics in Soils  
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	SITE	03GP013	03GP013	03GP013	03GP014	03GP014
	SAMPLE ID	03PS1308	03PS1312	03PS1318	03PS01404	03PS01408
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/02/96	10/02/96	10/02/96	10/03/96
	DEPTH (ft)	Tier II	8.00	12.00	18.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	2.2	0.51	1.4	2.4
Barium, Total		10000	10	4	6	28
Cadmium, Total		730.0	<1	<1	<1	<1
Chromium, Total			<5	<5	12	10.3
Copper, Total		1700	4.1	2.4	4.4	38
Lead, Total		400	<5	<5	<5	21
Mercury, Total		87.00	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	3.1	1.6	3.1	6.4
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	<1	<1
Zinc, Total		10000	8.3	7.2	12	617 J
Cyanide, Total		10000	...	...	...	<0.5?
Sum of Concentrations			27.70	15.71	38.90	154.80
						73.60

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

? = Duplicate records found, Data review required.

**Analytical Summary - Inorganics in Soils  
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? = Duplicate records found, Data review required.

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Soils  
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**Values represent total concentrations unless noted** < = Not detected at indicated reporting limit --- = Not analyzed

? = Duplicate records found. Data review required.

For BCL INORG

California Comparison 1995 VRP Tier II Non-Residential

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 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

SITE	03GP016	03GP017	03GP017	03GP017	03GP017
SAMPLE ID	03PS01614	03PS01708	03PS01712	03PS01712	03PS01716
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/03/96	10/04/96	10/04/96
	DEPTH (ft)	Tier II	14.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
			Duplicate 1		Primary
Arsenic, Total		438	2.6	2.7	3.3 J
Barium, Total		10000	20	17	6
Cadmium, Total		730.0	<1	<1	<1
Chromium, Total			15	<5	<5
Copper, Total		1700	5.7	4.8	5.5
Lead, Total		400	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1
Nickel, Total		10000	5.3	6.8	4.4
Selenium, Total		7300	<0.6	<0.6	<0.6
Silver, Total		7300	1	<1	<1
Zinc, Total		10000	21	16	15
Cyanide, total		10000			12
Sum of Concentrations		70.60	45.90	33.20	27.30
					57.80
Values represent total concentrations unless noted < =Not detected at indicated reporting limit ... =Not analyzed					
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - Inorganics in Soils**  
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**Voluntary Site Investigation  
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South Bend, Indiana							
CONSTITUENT (Units in mg/kg)	SITE	03GP019	03GP010	03GP019	03GP019	03GP019	03GP019
	SAMPLE ID	03P601908	03P601912	03P601904	03P601906	03P601912	
	DATE	1996 VRP	10/25/96	10/25/96	10/28/96	10/28/96	10/28/96
DEPTH (ft)	Tier II	8.00	12.00	4.00	8.00	12.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	1.7	1.6	6.3	4.6	0.84
Barium, Total		10000	13	7.1	16	50	4.3
Cadmium, Total		730.0	<1	<1	<1	<1	<1
Chromium, Total			<5	<6	6.4	9.8	<5
Copper, Total		1700	2.9	3.9	6.3	8.1	3
Lead, Total		400	<5	<5	6.6	<5	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	5.2	4.3	3.8	15	4.2
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	2	1.4	<1
Zinc, Total		10000	23	24	12	70	12
Cyanide, total		10000					
Sum of Concentrations			45.80	40.80	57.60	159.90	24.34

**Values represent total concentrations unless noted**      **<=** = Not detected at indicated reporting limit      **---** = Not analyzed

For BCL INORG

Census Composition 1996 MRP Timeline Non-Residential

**Analytical Summary - Inorganics in Soils  
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Voluntary Site Investigation  
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South Bend, Indiana**

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South Bend, Indiana							
CONSTITUENT (Units in mg/kg)	SITE	03GP020	03GP020	03GP020	03GP021	03GP021	
	SAMPLE ID	03PS02004	03PS02008	03PS02014	03PS02104	03PS02108	
	DATE	1996 VRP	10/28/96	10/28/96	10/28/96	10/28/96	10/28/96
DEPTH (ft)	Tier II	4.00	8.00	14.00	4.00	8.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	2.2	4.3	2.8	1.7	3.8
Barium, Total	10000	12	8.1	8.0	4.2	11	
Cadmium, Total	730.0	<1	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	8.1	<5	<5	
Copper, Total	1700	11	4.3	5.2	4.6	6.3	
Lead, Total	400	<5	<5	<5	<5	<5	
Mercury, Total	87.80	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	8.5	1.9	7.2	4.8	5.7	
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	1.6	<1	<1	<1	<1	
Zinc, Total	10000	52	<5	21	11	16	
Cyanide, total	10000	...	...	...	...	...	
Sum of Concentrations		87.30	19.60	52.80	26.30	42.80	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL INORG

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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 Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.

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 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in mg/kg)	SITE	03GP022	03GP022	03GP022	03GP022	08GP004
	SAMPLE ID	03PS02204	03PS02208	03PS02212	03GD02212	08PS00408
	DATE	1996 VRP	10/28/96	10/28/96	10/28/96	10/28/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Arsenic, Total	438	0.63	2.4	4.3	1.8	6.4
Barium, Total	10000	18	38	2.8	2.8	29
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	7.3	<5	<5	<5
Copper, Total	1700	3.9	7.7	3	2.7	6.1
Lead, Total	400	5	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	3.8	9.1	2.8	2.7	8.3
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	0.63
Silver, Total	7300	<1	14	<1	<1	<1
Zinc, Total	10000	14	22	9.3	8.4	84
Cyanide, total	10000					
<b>Sum of Concentrations</b>		<b>46.33</b>	<b>87.90</b>	<b>22.20</b>	<b>19.50</b>	<b>133.33</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL WORK

Quality Control: 1000 VRP | Non-Resident

**Analytical Summary - Inorganics in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**

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AlliedSignal Industrial Complex

**South Bend, Indiana**

South Bend, Indiana

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	08GP004	08GP004	11GP001	11GP001	11GP002
	SAMPLE ID	08P900412	08P900416	11P900104	11P900108	11P800204
	DATE	1996 VRP	10/08/96	10/08/96	10/03/96	10/03/96
DEPTH (ft)	Tier II	12.00	16.00	4.00	8.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	1.9	0.7	1.8	0.85	2.2
Barium, Total	10000	24	5	6	4.8	5.6
Cadmium, Total	730.0	<1	7.6	<1	<1	<1
Chromium, Total		6.4	5.6	<6	<5	<6
Copper, Total	1700	6.9	9.3	5.3	2.6	3.9
Lead, Total	400	<5	<5	6.2	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	5.5	7.3	4.6	2.4	6.5
Selenium, Total	7300	<0.6	<0.6	<0.6	<0.6	<0.6
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	27	60	18	11	13
Cyanide, total	10000	---	---	---	---	---
Sum of Concentrations		71.70	95.50	40.90	21.45	30.20

**Analytical Summary - Inorganics in Soils**  
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**Voluntary Site Investigation  
AlliedSignal Industrial Complex  
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CONSTITUENT (Units in mg/kg)	SITE	11GP002	11GP003	11GP003	11GP003	11GP004
	SAMPLE ID	11PS00208	11PS00304	11PS00308	11PS00312	11PS00404
	DATE	1996 VRP	10/03/96	10/04/96	10/04/96	10/04/96
DEPTM (ft)	Tier II	8.00	4.00	8.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.85	1.6	0.4	2.6	1
Barium, Total	10000	3.8	5.3	3	10	4.4
Cadmium, Total	730.0	< 1	< 1	< 1	< 1	< 1
Chromium, Total		< 5	< 5	< 5	5.5	< 5
Copper, Total	1700	2.3	3.8	3	6.4	6.3
Lead, Total	400	< 5	< 5	< 5	< 5	< 5
Mercury, Total	87.60	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nickel, Total	10000	2.2	4.4	2.7	6.9	4.4
Selenium, Total	7300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Silver, Total	7300	< 1	< 1	< 1	2.2	< 1
Zinc, Total	10000	10	12	6.9	22	13
Cyanide, total	10000	...	...	...	...	...
Sum of Concentrations		19.15	27.10	16.00	55.50	28.10

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Area 3/11- Alleged Former Disposal Area/Carbon Brake Exp.**

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## **Voluntary Site Investigation**

#### AlliedSignal Industrial Complex

## South Bend, Indiana

	SITE	11GP004	11GP005	11GP006	11GP006	11GP006
	SAMPLE ID	11PS00409	11PS00504	11PS00508	11PS00512	11PS00604
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/04/96	10/04/96	10/04/96	10/04/96
	DEPTH (ft)	Tier II	9.00	4.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.7	1.7	1.9	38
Barium, Total		10000	7.9	13	6.1	8.5
Cadmium, Total		730.0	<1	<1	<1	<1
Chromium, Total			19	<6	<6	6.4
Copper, Total		1700	5	5.5	3.4	5.8
Lead, Total		400	<5	<5	<5	6
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	4.5	4	3.3	10
Selenium, Total		7300	<0.5	<0.5	<0.6	<0.6
Silver, Total		7300	<1	<1	<1	1.4
Zinc, Total		10000	15	16	12	20
Cyanide, total		10000				
Sum of Concentrations		52.10	40.20	26.70	95.10	22.50

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - Inorganics in Soils  
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 Voluntary Site Investigation  
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CONSTITUENT	(Units in mg/kg)	SITE	11GP006	11GP006	11GP007	11GP007	11GP007
		SAMPLE ID	11PS00608	11PS00612	11PS00708	11PS00712	11PS00715
		DATE	1996 VRP	10/04/96	10/04/96	10/05/96	10/05/96
		DEPTH (ft)	Tier II	8.00	12.00	8.00	12.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	2	1.1	<0.25	0.92	1.5
Barium, Total		10000	6.1	4.4	3.7	6.8	5.9
Cadmium, Total		730.0	<1	<1	<1	<1	<1
Chromium, Total			<5	<5	<5	<5	<5
Copper, Total		1700	4.5	1.7	2.4	6	4.2
Lead, Total		400	<5	<5	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	3.8	2.1	2.9	4.6	4.6
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	<1	<1	<1
Zinc, Total		10000	17	8.8	8	16	18
Cyanide, total		10000					
<b>Sum of Concentrations</b>			<b>33.20</b>	<b>16.10</b>	<b>17.00</b>	<b>34.12</b>	<b>36.20</b>
<hr/>							
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
 For RCL INORG  Criteria Comparison 1996 VRP Tier II Non-Residential 							

Analytical Summary - Inorganics in Soils  
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 Voluntary Site Investigation  
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CONSTITUENT (Units in mg/kg)	SITE	11GP008	11GP008	11GP008	11GP009	11GP009
	SAMPLE ID	11PS00804	11PS00808	11PS00812	11PS00904	11PS00910
	DATE	1996 VRP	10/16/96	10/16/96	10/16/96	11/13/96
DEPTH (ft)	Tier-II	4.00	8.00	12.00	4.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.66	1.2	1.2	0.73	1.3
Barium, Total	10000	4	5.2	9.1	4.6	23
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	5	<5	9.9
Copper, Total	1700	2.5	3.4	2.8	3.4	8.5
Lead, Total	400	<5	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	2.8	3	4	3.2	8
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	9.1	13	10	11	23
Cyanide, total	10000					
Sum of Concentrations		19.06	25.80	32.10	22.93	74.90
<hr/>						
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential					

**Analytical Summary - Inorganics in Soils  
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CONSTITUENT	SITE	11GP009	11GP010	11GP010	11GP010
	SAMPLE ID	11PS00912	11PS01004	11PS01008	11PS01012
	DATE	1996 VRP	11/13/96	12/17/96	12/17/96
DEPTH (ft)	Tier II	12.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total	438	9.4	1	0.82	2.1
Barium, Total	10000	77	6.1	4.4	8.8
Cadmium, Total	730.0	<1	<1	<1	<1
Chromium, Total		16	<5	<5	<6
Copper, Total	1700	27	3.2	1.8	4.4
Lead, Total	400	11	<5	<5	<6
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	24	4.4	2.4	4.7
Selenium, Total	7300	<0.5	<0.5	<0.6	<0.6
Silver, Total	7300	2.1	<1	<1	1.1
Zinc, Total	10000	64	15	8.7	18
Cyanide, total	10000	—	—	—	—
Sum of Concentrations		230.50	28.70	18.12	39.10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following modifier(s) exist: J

For RCL INORG

**Analytical Summary - VOCs in Groundwater  
Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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**Analytical Summary - VOCs in Groundwater**  
**Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.**

**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana							
CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	01CPT014	01CPT014	01CPT014	01CPT014	01CPT014	01CPT014
	SAMPLE ID	1996 VRP	01CPW01426	01CPW01435	01CQD01435	01CPW01446	01CPW01455
	DATE	Tier II	07/23/97	07/23/97	07/23/97	07/23/97	07/23/97
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate	Primary	Primary	Primary
Vinyl chloride	10	<1	<1	<1	<1	<1	<1
Ethylbenzene	10220	<1	<1	<1	<1	<1	<1
Toluene	20440	1.3	<1	<1	<1	<1	<1
Acetone	10220	62	<50	<50	<50	<50	<50
Naphthalene	4088	---	---	---	---	---	---
1,1-Dichloroethane	10220	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	31.4	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	1022	---	---	---	---	---	---
trans-1,2-Dichloroethene	2000	---	---	---	---	---	---
1,2-Dichloroethene (Total)		<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	9198	<1	<1	<1	<1	<1	<1
Trichloroethene	260	<1	<1	<1	<1	<1	<1
Sum of Concentrations		63.30	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

Analytical Summary - VOCs in Groundwater  
 Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	01CPT014	01CPT014	01CPT014	03GP005	03GP006
	SAMPLE ID	1996 VRP	01CPW01465	01CPW01493	01CPW01478	03PW00521
	DATE	Tier II	07/24/97	07/24/97	07/24/97	10/26/96
RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<1	<1	<1	<10	<2
Ethylbenzene	10220	<1	<1	<1	<5	<5
Toluene	20440	<1	<1	<1	<5	<5
Acetone	10220	<50	<50	<50	<100	<5
Naphthalene	4088	---	---	---	<5	<5
1,1-Dichloroethane	10220	<1	<1	<1	<5	<5
1,2-Dichloroethene	31.4	<1	<1	<1	<5	<5
cis-1,2-Dichloroethene	1022	---	---	---	<5	<5
trans-1,2-Dichloroethene	2000	---	---	---	<5	<5
1,2-Dichloroethene (Total)	9198	<2	<2	<2	---	---
1,1,1-Trichloroethane	9198	<1	<1	<1	<5	<5
Trichloroethene	260	<1	<1	<1	<5	180
Sum of Concentrations		0.00	0.00	0.00	0.00	180.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL VOC1	Criteria Comparison 1996 VRP Tier II Non-Residential					

Analytical Summary - VOCs in Groundwater  
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CONSTITUENT (Units in ug/l)	SITE	03GP011	03GP012	08GP004	11GP001	11GP003
	SAMPLE ID	1996 VRP	03PW1125	03PW1223	08PW00422	11PW0116
	DATE	Tier II	10/02/96	10/02/96	10/09/96	10/03/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<2	<10	<100	<10
Ethylbenzene	10220	<5	<5	<5	<250	6.4
Toluene	20440	<5	<5	<5	<250	<5
Acetone	10220			<100		<100
Naphthalene	4088	<5	<5	<5	<250	<5
1,1-Dichloroethane	10220	<5	<5	<5	<250	7.7
1,2-Dichloroethane	31.4	<5	<5	<5	<250	<5
cis-1,2-Dichloroethene	1022	<5	100	<5	<2500	<5
trans-1,2-Dichloroethene	2000	<5	<5	<5	<250	<5
1,2-Dichloroethane (Total)						
1,1,1-Trichloroethane	9198	<5	17	<5	440	<5
Trichloroethane	260	<5	<5	<5	<250	<5
Sum of Concentrations		0.00	117.00	0.00	2940.00	14.10
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed						
(1) = Greater than Action Level						
For RCL VOC						
Criteria Comparison 1996 VRP Tier II Non-Residential						

Analytical Summary - VOCs in Groundwater  
 Area 3/11 - Alleged Former Disposal Area/Carben Brake Exp.  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE	11GP006	11GP009	7-25	7-25	7-25	7-25
	SAMPLE ID	1996 VRP	11PW00617	11PW00918		7-25	
	DATE	Tier II	10/04/96	11/13/96	12/20/96	03/16/97	06/03/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	[130]	[20]	<2	<10	<2	
Ethylbenzene	10220	<5	<5	<5	<5	<5	<5
Toluene	20440	<5	<5	<5	<5	<5	<5
Acetone	10220	<100	<100	<100	<100	<100	<100
Naphthalene	4088	<5	<5	<5	<5	---	---
1,1-Dichloroethane	10220	25	26	<5	<5	<5	<5
1,2-Dichloroethene	31.4	<5	7.6	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	79	310	<5	<5	<5	<5
trans-1,2-Dichloroethene	2000	<5	<5	<5	<5	<5	<5
1,2-Dichloroethene (Total)							
1,1,1-Trichloroethane	9198	24	56	<5	<5	<5	<5
Trichloroethene	260	<5	<5	<5	<5	<5	<5
Sum of Concentrations		268.00	419.60	0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
[] = Greater than Action Level							
For RCL VOC1							
Criteria Comparison 1996 VRP Tier II Non-Residential							

Analytical Summary - VOCs in Groundwater  
 Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.  
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CONSTITUENT (Units in ug/l)	SITE	7-25	7-25	7-26	7-50	MW-2
	SAMPLE ID	1996 VRP	7-25		7-50	
	DATE	Tier II	07/18/97	09/25/97	12/09/97	07/18/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	<10	<10	<2
Ethylbenzene	10220		<5	<5.0	<5.0	<5
Toluene	20440		<5	<5.0	<5.0	<5
Acetone	10220		<100	<100	<100	<100
Naphthalene	4088		---	---	---	ND#
1,1-Dichloroethane	10220		<5	<5.0	<5.0	<5
1,2-Dichloroethane	31.4		<5	<5.0	<5.0	<5
cis-1,2-Dichloroethene	1022		<5	<5.0	<5.0	140
trans-1,2-Dichloroethene	2000		<5	<5.0	<5.0	<5
1,2-Dichloroethane (Total)			2.2			<2
1,1,1-Trichloroethane	9198		<6	<6.0	<6.0	34
Trichloroethane	260		<6	<6.0	<6.0	<6
Sum of Concentrations		3.40	0.00	0.00	0.00	181.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
# = Constituent found in more than one test method, highest result reported. ND = Not Detected						
RCL	1996	VRP	Non-Residential	Primary	12/09/97	12/20/98
Media Comparison	10220	10220	10220	10220	10220	10220

**Analytical Summary - VOCs in Groundwater**  
**Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.**

<b>Voluntary Site Investigation</b>
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<b>South Bend, Indiana</b>

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CONSTITUENT (Units in ug/l)	SITE	MW-2	MW-2	MW-2	MW-2	MW-3
	SAMPLE ID	1996 VRP	MW-2			
	DATE	Tier II	03/18/97	08/05/97	09/26/97	12/09/97
Vinyl chloride	10	< 250	< 2	[70]	[83]	< 2
Ethylbenzene	10220	< 130	< 5	< 25	< 10	< 5
Toluene	20440	< 130	< 5	< 25	< 10	< 5
Acetone	10220	< 2500	< 100	< 500	< 200	< 100
Naphthalene	4088	---	---	---	---	< 5
1,1-Dichloroethane	10220	< 130	260	190	110	< 5
1,2-Dichloroethane	31.4	< 130	< 6	[48]	< 10	< 5
cis-1,2-Dichloroethene	1022	[2400]	[3500]	[2600]	960	76
trans-1,2-Dichloroethene	2000	< 130	< 5	< 25	14	< 5
1,2-Dichloroethene (Total)		---	---	---	---	---
1,1,1-Trichloroethane	9198	880	960	500	240	9.3
Trichloroethene	260	170	< 5	38	19	6.8
Sum of Concentrations		3450.00	4720.00	3445.00	1416.00	91.10

Analytical Summary - VOCs in Groundwater  
 Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
	SAMPLE ID	1996 VRP	MW-3	MW-3	06/05/97	09/26/97	12/10/97
	DATE	Tier II	03/18/97	03/18/97	Primary	Primary	Primary
RESULT TYPE	Non-Residential	Primary	Duplicate	Primary	Primary	Primary	Primary
Vinyl chloride	10	< 10	< 10	< 2	< 10	< 10	< 10
Ethylbenzene	10220	< 5	< 5	< 5	< 5.0	< 5.0	< 5.0
Toluene	20440	< 5	< 5	< 5	< 5.0	< 5.0	< 5.0
Acetone	10220	< 100	< 100	< 100	< 100	< 100	< 100
Naphthalene	4088	---	---	---	---	---	---
1,1-Dichloroethane	10220	< 5	< 5	< 5	5.0	5.1	5.1
1,2-Dichloroethane	31.4	< 5	< 5	< 5	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene	1022	38	39	60	57	60	60
trans-1,2-Dichloroethene	2000	< 5	< 5	< 5	< 5.0	< 5.0	< 5.0
1,2-Dichloroethene (Total)	8198	< 5	< 5	7.6	8.6	8.9	8.9
1,1,1-Trichloroethane	260	6.2	6	6.0	8.4	8.7	8.7
Sum of Concentrations		44.20	45.00	63.60	79.00	77.70	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOCs

Conc in µg/l

**Analytical Summary - VOCs in Groundwater**  
**Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.**  
**Voluntary Site Investigation**  
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CONSTITUENT (Units in ug/l)	SITE	MW-3
	SAMPLE ID	1996 VRP
	DATE	Tier II
	RESULT TYPE	Non-Residential
Vinyl chloride	10	< 10
Ethylbenzene	10220	< 5.0
Toluene	20440	< 5.0
Acetone	10220	< 100
Naphthalene	4088	---
1,1-Dichloroethane	10220	6.2
1,2-Dichloroethane	31.4	< 5.0
cis-1,2-Dichloroethene	1022	62
trans-1,2-Dichloroethene	2000	< 5.0
1,2-Dichloroethene (Total)		77.8
1,1,1-Trichloroethane	9198	7.1
Trichloroethene	260	6.8
<b>Sum of Concentrations</b>		<b>80.10</b>

**Analytical Summary - Inorganics in Groundwater**  
**Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.**

**Voluntary Site Investigation**  
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**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	03GP005	03GP006	03GP011	03GP012	11GP001
	SAMPLE ID	1996 VRP	03PW00521	03PW0620	03PW1126	03PW1223
	DATE	Tier II	10/25/96	10/01/96	10/02/96	10/03/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	---	---	---	---	---
Barium, Dissolved (Filtered)	7154	28	63	100	89.8	130
Cadmium, Dissolved (Filtered)	51.1	<0.2	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	12	<10	<10	<10	<10
Chromium, Total		---	---	---	---	---
Lead, Total		---	---	---	---	---
Sum of Concentrations		40.00	63.00	100.00	88.00	130.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

**Analytical Summary - Inorganics in Groundwater  
Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.  
Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	11GP003	11GP006	7-26	7-26	7-26
	SAMPLE ID	1996 VRP	11PW00316	11PW00617	7-26	7-26
	DATE	Tier II	10/04/96	10/04/96	12/20/96	03/18/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	---	---	ND	< 5	< 5
Barium, Dissolved (Filtered)	7154	61	140	55	---	---
Cadmium, Dissolved (Filtered)	61.1	< 0.2	< 0.2	0.7	---	---
Copper, Dissolved (Filtered)	3800	< 10	< 10	< 10	---	---
Chromium, Total		---	---	---	7	---
Lead, Total		---	---	---	27	---
Sum of Concentrations		61.00	140.00	55.70	34.00	0.00

**Analytical Summary - Inorganics in Groundwater**  
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CONSTITUENT <small>(Units in ug/l)</small>	SITE	MW-2	MW-2	MW-2	MW-3	MW-3
	SAMPLE ID	1996 VRP				
	DATE	Tier II	12/20/96	03/18/97	09/26/97	12/20/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	ND	< 5	< 5	ND	< 5
Barium, Dissolved (Filtered)	7154	150	---	---	100	---
Cadmium, Dissolved (Filtered)	51.1	< 0.2	---	---	< 0.2	---
Copper, Dissolved (Filtered)	3800	< 10	---	---	< 10	---
Chromium, Total		---	< 5	---	---	8.8
Lead, Total		---	12	---	---	3.8
Sum of Concentrations		150.00	12.00	0.00	100.00	13.40

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

ND = Not Det.

For BCL Interests

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Groundwater**  
**Area 3/11 - Alleged Former Disposal Area/Carbon Brake Exp.**

**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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South Bend, Indiana				
CONSTITUENT <small>(Units in ug/l)</small>	SITE	MW-3	MW-3	
	SAMPLE ID	1998 VRP	MW-3	
	DATE	Tier II	03/18/97	09/26/97
	RESULT TYPE	Non-Residential	Duplicate 1	Primary
Cyanide	2044	<5	<5	
Barium, Dissolved (Filtered)	7154	---	---	
Cadmium, Dissolved (Filtered)	61.1	---	---	
Copper, Dissolved (Filtered)	3800	---	---	
Chromium, Total	20	---	---	
Lead, Total	19	---	---	
<b>Sum of Concentrations</b>	<b>39.00</b>	<b>0.00</b>		

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---= Not analyzed

The following qualifier(s) exist: B

For RCL INORG

## **Criteria Comparison 1998 VRP Tier II Non-Residential**

## Analytical Summary - VOCs in Soils

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## Area 4/16 - I-Beam Building Area

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## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	04GP001	04GP001	04GP001	04GP001	04GP002
	SAMPLE ID	04PS00104	04PS00108	04PS00111	04PS00116	04PS00208
	DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/22/96
	DEPTH (ft)	Tier II	4.00	8.00	11.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	< 0.25	< 0.05	< 0.25	< 0.25	< 0.25
Ethylbenzene	1000	< 0.25	< 0.05	< 0.25	< 0.25	< 0.25
Xylene (total)	1000	< 0.25	< 0.1	< 0.25	< 0.25	< 0.25
Isopropylbenzene	1.0E+03	< 0.25	< 0.01	< 0.25	< 0.25	< 0.25
n-Propylbenzene	1.00E+03	< 0.25	< 0.01	< 0.25	< 0.25	< 0.25
1,3,5-Trimethylbenzene	1.00E+03	< 0.25	< 0.01	< 0.25	< 0.25	< 0.25
1,2,4-Trimethylbenzene	1.00E+3	< 0.25	0.12	< 0.25	< 0.25	< 0.25
Naphthalene	10000	< 0.25	< 0.05#	1.4	1.4	< 0.25
Acenaphthene	1.0E+04	---	0.41	---	---	---
2-Methylnaphthalene	10000	< 0.6	1.2#	0.73	1	< 0.6
Tetrachloroethene	8.01	< 0.1	< 0.05	< 0.1	< 0.1	< 0.1
Trichloroethene	25.73	< 0.1	< 0.05	< 0.1	< 0.1	< 0.1
Sum of Concentrations		0.00	1.73	1.73	2.40	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

ECL VRP Non-Residential

## Analytical Summary - VOCs in Soils

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Area 4/16 - I-Beam Building Area

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## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

**South Bend, Indiana**

04GP002

CONSTITUENT (Units in mg/kg)	SITE	04GP002	04GP002	04GP002	04GP003	04GP003
	SAMPLE ID	04P800212	04P800212	04P800215	04P800304	04P800306
	DATE	1996 VRP	10/23/96	10/23/96	10/23/96	10/23/96
DEPTH (ft)	Tier II	12.00	12.00	15.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylenes (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+ 3	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E + 04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.6	<0.6	<0.6	<0.6	<0.6
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

## Analytical Summary - VOCs in Soils

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Area 4/16 - I-Beam Building Area

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#### **Voluntary Site Investigation**

AlliedSignal Industrial Complex

## South Bend, Indiana

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    ... = Not analyzed

# = Constituent with more than one test method, highest result reported.

For BCL VOCs [REDACTED] Cyclic Compositions 1000-VRP Test Non-Residential

## Analytical Summary - VOCs in Soils

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## **Area 4/18 - I-Beam Building Area**

### **Voluntary Site Investigation**

AlliedSignal Industrial Complex

**South Bend, Indiana**

04GP006

CONSTITUENT (Units in mg/kg)	SITE	04GP005	04GP005	04GP005	07GP009	08GP009
	SAMPLE ID	04PS00504	04PS00506	04PS00513		08PS00904
	DATE	1996 VRP	10/23/96	10/23/96	10/23/96	12/17/96
DEPTH (ft)	Tier II	4.00	8.00	13.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Ethyl benzene	1000	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Xylene (total)	1000	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Isopropylbenzene	1.0E + 03	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
n-Propylbenzene	1.00E + 03	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
1,3,5-Trimethylbenzene	1.00E + 03	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
1,2,4-Trimethylbenzene	1.00E + 3	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Naphthalene	10000	< 0.25	< 0.25	< 0.25	< 0.33#	< 0.25
Acenaphthene	1.0E + 04	---	---	---	< 0.33	---
2-Methylnaphthalene	10000	< 0.5	< 0.5	< 0.5	< 0.33#	< 0.5
Tetrachloroethene	8.01	< 0.1	< 0.1	0.14	0.10	< 0.1
Trichloroethene	25.73	< 0.1	< 0.1	< 0.1	< 0.25	< 0.1
Sum of Concentrations		0.00	0.00	0.14	0.10	0.00

## Analytical Summary - VOCs in Soils

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## Area 4/16 - I-Beam Building Area

Date: 09/28/99

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	08GP009	08GP009	08GP009	08GP009	08GP012
	SAMPLE ID	08PS00908	08PS00912	08QD00912	08QD00912	08PS01204
	DATE	1998 VRP	10/21/96	10/21/96	10/21/96	10/21/96
	DEPTH (ft)	Tier II	8.00	12.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Duplicate 2	Primary
Toluene	1000	<0.25	<0.05	---	---	<0.25
Ethylbenzene	1000	<0.25	<0.05	---	---	<0.25
Xylene (total)	1000	<0.25	<0.1	---	---	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.01	---	---	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.01	---	---	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.01	---	---	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.01	---	---	<0.25
Naphthalene	10000	<0.25	<0.05#	<0.33	<0.33	<0.25
Acenaphthene	1.0E+04	---	<0.33	<0.33	<0.33	---
2-Methylnaphthalene	10000	<0.5	<0.1	---	<0.33	<0.5
Tetrachloroethane	8.01	<0.1	<0.05	---	---	<0.1
Trichloroethene	26.73	<0.1	<0.05	---	---	<0.1
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
# = Constituent found in more than one test method, highest result reported.

For PCL VOCs

Concen. 1998 VRP Tier Non-Residential

## Analytical Summary - VOCs in Soils

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Area 4/16 - I-Beam Building Area

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	08GP012	08GP012	08GP012	16GP001	16GP001
	SAMPLE ID	08PS01206	08PS01208	08PS01212	16PS00104	16PS00108
	DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/18/96
DEPTH (ft)	Tier II	6.00	6.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.05	<0.25	<0.25	<0.25
Ethylbenzene	1000	<0.25	<0.05	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.05*	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	<0.33	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.1	<0.5	<0.5	<0.5
Tetrachloroethene	8.01	<0.1	<0.05	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.05	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

\* = Constituent in more than one test method, highest result reported.

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Area 4/16 - I-Beam Building Area

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	16GP001	16GP001	16GP002	16GP002	16GP002
	SAMPLE ID	16PS00112	16PS00114	16PS00204	16PS00206	16PS00210
	DATE	1996 VRP	10/18/96	10/18/96	10/18/96	10/18/96
	DEPTH (ft)	Tier II	12.00	14.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.05	<0.25	<0.25	<0.25	<0.25
Ethylbenzene	1000	<0.05	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.1	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.01	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.01	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.05#	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	<0.33	---	---	---	---
2-Methylnaphthalene	10000	<0.1	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	8.01	<0.05	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.06	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
# = Constituent measured by more than one test method, highest result reported.

For RCL VOCs

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Area 4/16 - I-Beam Building Area

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	16GP003	16GP003	16GP003	16GP004	16GP004
	SAMPLE ID	16PS00304	16PS00306	16PS00314	16PS00404	16PS00408
	DATE	1996 VRP	10/18/96	10/18/96	10/18/96	10/21/96
	DEPTH (ft)	Tier II	4.00	8.00	14.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethylbenzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

AlliedSignal Industrial Complex

## AlliedSignal Industrial Complex South Bend, Indiana

SOUTH BEND, INDIANA  
16GB004

CONSTITUENT (Units in mg/kg)	SITE	16GP004	16QP004	16QP005	16GP005	16QP005
	SAMPLE ID	16P600416	16QD00415	08PS600804	08PS600812	08PS600810
	DATE	1996 VRP	10/21/96	10/21/96	10/14/96	10/14/96
DEPTH (ft)	Tier II	15.00	15.00	4.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Toluene		1000	0.31 J	0.9	< 0.25	< 0.25
Ethyl benzene		1000	1.2 J	2.6	< 0.25	< 0.25
Xylene (total)		1000	7.5	12	< 0.25	< 0.25
Isopropylbenzene		1.0E+03	< 0.25 UJ	1	< 0.25	< 0.25
n-Propylbenzene		1.00E+03	0.34 J	0.84	< 0.25	< 0.25
1,3,5-Trimethylbenzene		1.00E+03	0.88 J	1.9	< 0.25	< 0.25
1,2,4-Trimethylbenzene		1.00E+3	1.6 J	3	< 0.25	< 0.25
Naphthalene		10000	0.37 J	0.91	< 0.25	< 0.25
Acenaphthene		1.0E+04	---	---	---	---
2-Methylnaphthalene		10000	1.6	2.4	< 0.5	< 0.5
Tetrachloroethene		8.01	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethene		25.73	< 0.1	< 0.1	< 0.1	< 0.1
Sum of Concentrations		13.60	25.65	0.00	0.00	10.90

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

For BCL vac

Criteria Comparison 1996 VRP Tier II-Non-Residential

## Analytical Summary - VOCs in Soils

Area 4/16 - I-Beam Building Area

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	18GP005	18GP005	18QP005
	SAMPLE ID	18PS00508	18PS00612	18PS00615
	DATE	1996 VRP	10/21/96	10/21/96
	DEPTH (ft)	Tier II	4.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzenes	1.00E+03	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzenes	1.00E+03	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5
Tetrachloroethene	8.01	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: J, U

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - SVOCs in Soils  
Area 4/16 - I-Beam Building Area  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	04GP001	04GP001	04GP001	04GP001	04GP002
	SAMPLE ID	04PS00104	04PS00108	04PS00111	04PS00116	04PS00208
	DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/23/96
DEPTH (ft)	Tier II	4.00	8.00	11.00	16.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2-Methylnaphthalene	10000	< 0.5	1.2#	0.73	1	< 0.5
Acenaphthene	1.0E+04	---	0.41	---	---	---
Anthracene	1.00E+04	---	0.9	---	---	---
Benz(a)anthracene	---	---	0.46	---	---	---
Chrysene	1.00E+04	---	0.44	---	---	---
Fluorene	10000	---	0.87	---	---	---
Fluorene	1.00E+04	---	0.66	---	---	---
Naphthalene	10000	< 0.25	< 0.05#	1	1.4	< 0.25
Phenanthrene	1.00E+04	---	2.3	---	---	---
Pyrene	10000	---	1.6	---	---	---
Sum of Concentrations	0.00	8.74	1.73	2.40	0.00	---

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constitutes more than one test method, highest result reported.

For RCL SVOC Ontario Corporation 1995 VRP Tier II Non-Residential

## Analytical Summary - SVOCs in Soils

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Area 4/16 - I-Beam Building Area

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	(Units: in mg/kg)	SITE	04GP002	04GP002	04GP002	04GP003	04GP003
		SAMPLE ID	04PS00212	04QD00212	04PS00215	04PS00304	04PS00308
DATE	1996 VRP		10/23/96	10/23/96	10/23/96	10/23/96	10/23/96
DEPTH (ft)	Tier II		12:00	12:00	15:00	4:00	8:00
RESULT TYPE	Non-Residential		Primary	Duplicate 1	Primary	Primary	Primary
2-Methylnaphthalene	10000		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthene	1.0E + 04		---	---	---	---	---
Anthracene	1.00E + 04		---	---	---	---	---
Benz(a)anthracene			---	---	---	---	---
Chrysene	1.00E + 04		---	---	---	---	---
Fluorene	10000		---	---	---	---	---
Fluorene	1.00E + 04		---	---	---	---	---
Naphthalene	10000		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Phenanthrene	1.00E + 04		---	---	---	---	---
Pyrene	10000		---	---	---	---	---
Sum of Concentrations			0.00	0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
For RCL SVOC			Criteria Comparison 1996 VRP Tier II Non-Residential				

## Analytical Summary - SVOCs in Soils

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Area 4/16 - I-Beam Building Area

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	04GP003	04GP003	04GP004	04GP004	04GP004
	CACHE ID	04PS00312	04PS00315	04PS00408	04PS00412	04PS00417
	DATE	1996 VRP	10/23/96	10/23/96	10/23/96	10/23/96
	DEPTH (ft)	Tier II	12.00	16.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2-Methylnaphthalene	10000	<0.6	<0.1#	<0.5	<0.5	<0.5
Acenaphthene	1.00E+04	---	<0.33	---	---	---
Anthracene	1.00E+04	---	<0.33	---	---	---
Benzo (a) anthracene			<0.33			
Chrysene	1.00E+04	---	<0.33	---	---	---
Fluoranthene	10000	---	<0.33	---	---	---
Fluorene	1.00E+04	---	<0.33	---	---	---
Naphthalene	10000	<0.25	<0.05#	<0.25	<0.25	<0.25
Phenanthrene	1.00E+04	---	<0.33	---	---	---
Pyrene	10000		<0.33			
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed  
 # = Constituent in more than one test method, highest result reported.

For RCL SVOC Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - SVOCs in Soils

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Area 4/16 - I-Beam Building Area

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## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

**South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	04GP005	04GP005	04GP005	07GP009	08GP009
	SAMPLE ID	04PS00504	04PS00508	04PS00513		08PS00904
	DATE	1996 VRP	10/23/96	10/23/96	10/23/96	10/21/96
DEPTH (ft)	Tier II	4.00	8.00	13.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2-Methylnaphthalene	10000	< 0.5	< 0.5	< 0.5	< 0.33#	< 0.5
Acenaphthene	1.0E + 04					< 0.33
Anthracene	1.00E + 04	---	---	---	< 0.33	---
Benz(a)anthracene					< 0.33	---
Chrysene	1.00E + 04	---	---	---	< 0.33	---
Fluoranthene	10000	---	---	---	< 0.33	---
Fluorene	1.00E + 04	---	---	---	< 0.33	---
Naphthalene	10000	< 0.25	< 0.25	< 0.25	< 0.33#	< 0.25
Phenanthrene	1.00E + 04	---	---	---	< 0.33	---
Pyrene	10000	---	---	---	< 0.33	---
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

## Analytical Summary - SVOCs in Soils

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Area 4/16 - I-Beam Building Area

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	08GP009	08GP009	08GP009	08GP009	08GP012
SAMPLE ID	08P600900	08P600912	08QD00912	08QD00912	08P601204
CONSTITUENT (Units in mg/kg)	DATE	1998 VRP	10/21/96	10/21/96	10/21/96
DEPTH (ft)	Tier II	8.00	12.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Duplicate 2
2-Methylnaphthalene		10000	< 0.5	< 0.1	... < 0.33 < 0.5
Acenaphthene		1.0E+04		< 0.33	< 0.33 < 0.33
Anthracene		1.00E +04	---	< 0.33	< 0.33 < 0.33
Benzo (a) anthracene				< 0.33	< 0.33 < 0.33
Chrysene		1.00E + 04	---	< 0.33	< 0.33 < 0.33
Fluoranthene		10000	---	< 0.33	< 0.33 < 0.33
Fluorene		1.00E + 04	---	< 0.33	< 0.33 < 0.33
Naphthalene		10000	< 0.25	< 0.05#	< 0.33 < 0.33 < 0.25
Phenanthrene		1.00E + 04	---	< 0.33	< 0.33 < 0.33
Pyrene		10000	---	< 0.33	< 0.33 < 0.33
Sum of Concentrations		0.00	0.00	0.00	0.00 0.00

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit --- =Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL SVOC

Criteria Comparison 1998 VRP Tier II Non-Residential

**Analytical Summary - SVOCs in Soils  
Area 4/16 - I-Beam Building Area  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	08GP012	08GP012	08GP012	16GP001	16GP001
	SAMPLE ID	08PS01206	08PS01208	08PS01212	16PS00104	16PS00108
	DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/18/96
DEPTH (ft)	Tier II	6.00	8.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2-Methylnaphthalene	10000	<0.6	<0.1	<0.6	<0.6	<0.6
Aceanaphthene	1.0E+04	...	<0.33	...	...	...
Anthracene	1.00E+04	...	<0.33	...	...	...
Benz[a]anthracene	1.00E+04	...	<0.33	...	...	...
Chrysene	1.00E+04	...	<0.33	...	...	...
Fluoranthene	10000	...	<0.33	...	...	...
Fluorene	1.00E+04	...	<0.33	...	...	...
Naphthalene	10000	<0.25	<0.06*	<0.25	<0.25	<0.25
Phenanthrene	1.00E+04	...	<0.33	...	...	...
Pyrene	10000	...	<0.33	...	...	...
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

## Analytical Summary - SVOCs in Soils

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South Bend, Indiana							
	SITE	16GP001	16GP001	16GP002	16GP002	16GP002	16GP002
	SAMPLE ID	16PS00112	16PS00114	16PS00204	16PS00208	16PS00210	
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	10/18/96	10/18/96	10/18/96	10/18/96
	DEPTH (ft)	Tier II	12.00	14.00	4.00	8.00	10.00
	RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
2-Methylnaphthalene		10000	<0.1	<0.5	<0.5	<0.5	<0.5
Acenaphthene		1.0E+04	<0.33				
Anthracene		1.00E+04	<0.33	---	---	---	---
Benz(a)anthracene			<0.33				
Chrysene		1.00E+04	<0.33	---	---	---	---
Fluoranthene		10000	<0.33				
Fluorene		1.00E+04	<0.33	---	---	---	---
Naphthalene		10000	<0.05#	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E+04	<0.33	---	---	---	---
Pyrene		10000	<0.33	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

Criteria Comparison APR6 VRP T- II N- President

Analytical Summary - SVOCs in Soils  
 Area 4/16 - I-Beam Building Area  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex

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South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	16GP003	16GP003	16GP003	16GP004	16GP004
		SAMPLE ID	16PS00304	16PS00308	16PS00314	16PS00404	16PS00408
		DATE	1996 VRP	10/18/96	10/18/96	10/18/96	10/21/96
		DEPTH (ft)	Tier II	4.00	8.00	14.00	4.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2-Methylnaphthalene	10000		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthene	1.0E+04						
Anthracene	1.00E+04						
Benz(a)anthracene							
Chrysene	1.00E+04		--	--	--	--	--
Fluoranthene	10000						
Fluorene	1.00E+04		--	--	--	--	--
Naphthalene	10000		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Phenanthrene	1.00E+04		--	--	--	--	--
Pyrene	10000						
Sum-of Concentrations			0.00	0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed							
For RCL SVOC			Criteria Comparison 1996 VRP Tier II Non-Residential				

## Analytical Summary - SVOCs in Soils

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Area 4/16 - I-Beam Building Area

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	16GP004	16GP004	16GP005	16GP005	16GP005
	SAMPLE ID	16PS00415	16QD00415	08PS00804	08PS00812	08PS00816
	DATE	1996 VRP	10/21/96	10/21/96	10/14/96	10/14/96
	DEPTH (ft)	Tier II	15.00	15.00	4.00	12.00
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary
2-Methylnaphthalene		10000	1.6	2.4	< 0.6	< 0.6
Aconophthrene		1.0E + 04				
Anthracene		1.00E + 04				
Benzo (a) anthracene						
Chrysene		1.00E + 04				
Fluoranthene		10000				
Fluorene		1.00E + 04				
Naphthalene		10000	0.37	0.91	< 0.25	< 0.25
Phenanthrene		1.00E + 04				
Pyrene		10000				
Sum of Concentrations			1.87	3.31	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

F RCL SVOC

Olathe Q Cessor 1996 VRP Tier II Non-Residential

**Analytical Summary - SVOCs in Soils  
Area 4/1C - I Beam Building Area  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

Page: 1J  
Date: 09/28/99

South Bend, Indiana					
CONSTITUENT: (Units in mg/kg)	SITE	16GP005	16GP006	16GP005	16GP006
	SAMPLE ID	16PS00508	16PS00512	16PS00615	
	DEPTH (ft)	Tier II	4.00	12.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	
Acenaphthene	1.0E+04	---	---	---	
Anthracene	1.00E+04	---	---	---	
Benz(a)anthracene		---	---	---	
Chrysene	1.00E+04	---	---	---	
Fluoranthene	10000	---	---	---	
Fluorene	1.00E+04	---	---	---	
Naphthalene	10000	<0.25	<0.25	<0.25	
Phenanthrene	1.00E+04	---	---	---	
Pyrrene	10000	---	---	---	
<b>Sum of Concentrations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: J

Criteria Comparison 1996 VBP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Area 4/16 - I-Beam Building Area

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
1996 VRPTier II Non-Residential				6000
04GP001	10/22/96	4.00	Prim	4900
04GP001	10/22/96	11.00	Prim	[7900]
04GP001	10/22/96	11.00	Dup 1	[10400]
04GP001	10/22/96	16.00	Prim	[6800]
04GP002	10/23/96	8.00	Prim	1500 PI
04GP002	10/23/96	12.00	Prim	2500 PI
04GP002	10/23/96	15.00	Prim	4500 PI
04GP002	10/23/96	15.00	Dup 1	5300
04GP003	10/23/96	4.00	Prim	<10
04GP003	10/23/96	8.00	Prim	<10
04GP003	10/23/96	12.00	Prim	<10
04GP004	10/23/96	6.00	Prim	<10
04GP004	10/23/96	12.00	Prim	<10
04GP004	10/23/96	17.00	Prim	<10
04GP005	10/23/96	4.00	Prim	22
04GP005	10/23/96	8.00	Prim	<10
04GP005	10/23/96	13.00	Prim	<10
07GP009	12/17/96	4.00	Prim	420 PI
07GP009	12/17/96	8.00	Prim	<10
07GP009	12/17/96	14.00	Prim	<10
08GP009	10/21/96	4.00	Prim	84 PI
08GP009	10/21/96	8.00	Prim	1100 PI
08GP012	10/22/96	4.00	Prim	130 PI
08GP012	10/22/96	6.00	Prim	510 PI
08GP012	10/22/96	12.00	Prim	<10
16GP001	10/18/96	4.00	Prim	50
16GP001	10/18/96	8.00	Prim	<10
16GP001	10/18/96	14.00	Prim	13
16GP002	10/18/96	4.00	Prim	11
16GP002	10/18/96	8.00	Prim	<10
16GP002	10/18/96	10.00	Prim	<10
16GP003	10/18/96	4.00	Prim	1500 PI
16GP003	10/18/96	8.00	Prim	720 PI

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit ... = Not analyzed

[] = Greater than Action Level

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Area 4/16 - I-Beam Building Area

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
16GP003	10/18/96	14.00	Prim	<10
16GP004	10/21/96	4.00	Prim	<10
16GP004	10/21/96	8.00	Prim	3600 PI
16GP004	10/21/96	15.00	Prim	2600 JPI
16GP004	10/21/96	15.00	Dup. 1	5010
16GP005	10/14/96	4.00	Prim	10
16GP005	10/14/96	12.00	Prim	<10
16GP005	10/14/96	16.00	Prim	[6400]
16GP005	10/21/96	4.00	Prim	650 PI
16GP005	10/21/96	12.00	Prim	<10
16GP005	10/21/96	15.00	Prim	<10

Values represent total concentrations unless noted &lt;= Not detected at indicated reporting limit ---=Not analyzed

[I] = Greater than Action Level The following qualifier(s) exist: P, I, J

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Soils  
 Area 4/16 - I-Beam Building Area  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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 Date: 09/28/99

CONSTITUENT (Units in mg/kg)	SITE	04GP001	04GP001	04GP001	04GP001	04GP002
	SAMPLE ID	04PS00104	04P600108	04PS00111	04P600116	04P600208
DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/22/96	10/23/96
DEPTH (ft)	Tier II	4.00	8.00	11.00	16.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	3.1	2.3	0.67	2.6	1.3
Barium, Total	10000	16	30	6.1	21	1.1
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total	9.8	7.6	<5	12	<6	
Copper, Total	1700	17	7.6	3.7	11	5.3
Lead, Total	400	<9.6	<6	<6	6.7	<6
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	5.9	10	3.8	10	4.5
Selenium, Total	7300	0.6	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	1.3	1.2	<1	1.6	<1
Zinc, Total	10000	22	49	13	27	17
Sum of Concentrations		85.20	107.60	26.17	90.80	39.10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[REDACTED] RCW MORG [REDACTED] Maria [REDACTED] Mariso [REDACTED] 5 VR [REDACTED] II N [REDACTED] sider [REDACTED]



## Analytical Summary - Inorganics in Soils

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## Area 4/16 - I-Beam Building Area

Date: 09/28/99

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	04GP003	04GP004	04GP004	04GP004	04GP005
	SAMPLE ID	04PS00315	04PS00406	04PS00412	04PS00417	04PS00604
DATE	1996 VRP	10/23/96	10/23/96	10/23/96	10/23/96	10/23/96
DEPTH (ft)	Tier II	16.00	6.00	12.00	17.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.93	6.9	0.48	0.72	4.5
Barium, Total	10000	5.9	8.4	7.6	7.3	48
Cadmium, Total	730.0	<1	<1	1.5	<1	1.1
Chromium, Total		<6	8.7	<6	<6	12
Copper, Total	1700	4.3 8	2.9	3.4	3.4	19
Lead, Total	400	<5	<6	<5	<5	13
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	0.32
Nickel, Total	10000	4.9	2	5.2	5.2	6.2
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	1.8	<1	<1	1.7
Zinc, Total	10000	14	8.8	34	20	39
Sum of Concentrations		30.03	39.50	52.18	36.62	144.82

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit --- = Not analyzed

RCL/HORG

## Analytical Summary - Inorganics in Soils

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Area 4/16 - I-Beam Building Area

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	SITE	04GP005	04GP006	07GP009
	SAMPLE ID	04PS00508	04PS00513	
	DATE	1996 VRP	10/23/96	10/23/96
	DEPTH (ft)	Tier II	8.00	13.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary
Arsenic, Total	438	1.6	0.6	0.53
Barium, Total	10000	2.9	7.9	7.5
Cadmium, Total	730.0	<1	<1	<1
Chromium, Total		<5	<5	<5
Copper, Total	1700	3.3	3.7	3.6
Lead, Total	400	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1
Nickel, Total	10000	3.5	3	4.2
Selenium, Total	7300	<0.5	<0.5	<0.5?
Silver, Total	7300	<1	<1	<1?
Zinc, Total	10000	14	9.1	117
Sum of Concentrations		26.30	24.30	26.83

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

7 = Duplicate records found. Data review required. The following qualifier(s) exist: B

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Groundwater

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Area 4/16 - I-Beam Building Area

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	04GP001	04GP004	08GP009	08GP012	08GP012	
	SAMPLE ID	1996 VRP	04PW00120	04PS00421	08PW00920	08PW01219	08QD01219
	DATE	Tier II	10/22/96	10/23/96	10/21/96	10/22/96	10/22/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1	
Vinyl chloride	10	<10	<10	<2	<2	<2	
Ethylbenzene	10220	<5	190 J	<5	<5	<5	
Xylene (total)	204400	<10	190 J	<5	<5	<5	
Isopropylbenzene	1.02E+4	<1	110 J	<5	<5	<5	
2-Methylnaphthalene	2040.00	<10	<10	13	<10	<10	
Naphthalene	4088	<5	<5	14	<5	<5	
1,2,4-Trimethylbenzene	5.11E+3	<1	<1	5.1	<5	<5	
1,3,5-Trimethylbenzene	5.11E+3	<1	4 J	<5	<5	<5	
1,2-Dichloroethane	31.4	<5	10 J	<5	<5	<5	
cis-1,2-Dichloroethene	1022	<5	<6	8.8	<5	<5	
1,1,1-Trichloroethane	9188	<5	<5	<5	<5	<5	
Tetrachloroethene	56.1	<5	<5	<5	<5	<5	
Trichloroethene	260	<5	<5	<5	<5	<5	
Sum of Concentrations:		0.00	504.00	40.90	0.00	0.00	

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL VRP

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater  
Area 4/16 - I-Beam Building Area  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	MW-5	MW-5	MW-5	MW-5	MW-5
	SAMPLE ID	1996 VRP	01QD0522	MW-5	MW-5	MW-5
	DATE	Tier II	12/20/96	12/20/96	03/18/97	06/05/97
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary
Vinyl chloride	10	[13]	[19]	[13]	[12]	[13]
Ethylbenzene	10220	<5	<5	<5	<5	<5.0
Xylene (total)	204400	<5	<5	<10	<5	<10
Isopropylbenzene	1.02E+4	<5	<5	--	<5	--
2-Methylnaphthalene	2040.00	<5#	<5#	--	<10	--
Naphthalene	4088	ND#	ND#	--	--	--
1,2,4-Trimethylbenzene	5.11E+3	<400	<400	--	--	--
1,3,5-Trimethylbenzene	5.11E+3	<5	<5	--	<5	--
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5.0
cis-1,2-Dichloroethene	1022	14	13	9.8	11	11
1,1,1-Trichloroethane	9198	12	11	9	11	16
Tetrachloroethene	56.1	<5	<5	5.8	8.4	13
Trichloroethene	260	29	29	24	28	42
Sum of Concentrations		68.00	72.00	61.60	70.40	96.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. || = Greater than Action Level ND = Not Detected

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Groundwater

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Area 4/16 - I-Beam Building Area

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT [Units in ug/l]	SITE	MW-6
	SAMPLE ID	1996 VRP
	DATE	Tier II
RESULT TYPE	Non-Residential	Primary
Vinyl chloride	10	<10
Ethylbenzene	10220	<5.0
Xylene (total)	204400	<10
Isopropylbenzene	1.02E+4	...
2-Methylnaphthalene	2040.00	...
Naphthalene	4088	...
1,2,4-Trimethylbenzene	5.11E+3	...
1,3,5-Trimethylbenzene	5.11E+3	...
1,2-Dichloroethane	31.4	<5.0
cis-1,2-Dichloroethane	1022	11
1,1,1-Trichloroethane	9198	33
Tetrachloroethane	56.1	8.8
Trichloroethene	260	18
Sum of Concentrations		70.80

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit ... = Not analyzed

The following modifier(s) exist: J

For RCL NO:

Media Comparison

VRP

I No

Ident

Analytical Summary - Inorganics in Groundwater  
 Area 4/16 - I-Beam Building Area  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

Page: 1A  
 Date: 09/28/99

CONSTITUENT	(Units in ug/l)	SITE	04GP001	04GP004	MW-5	MW-6	MW-6
		SAMPLE ID	1996 VRP	04PW00120	04PS00421	01QD0522	MW-6
		DATE	Tier II	10/22/96	10/23/96	12/20/96	12/20/96
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Cyanide		2044	---	---	9	---	<6
Arenic, Dissolved (Filtered)		50	<1	<1	1.6	1.5	1.5
Barium, Dissolved (Filtered)		7154	110	97	100	99	---
Lead, Dissolved (Filtered)		1.50E+1	<1	2.7	<1	<1	<1
Chromium, Total			---	---	---	---	290
Urd, Total					---	---	152
Nickel, Total			---	---	---	---	92
Sum of Concentrations			110.00	99.70	110.80	100.50	534.00
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
For RCL INORG							
Criteria Comparison 1996 VRP Tier II Non-Residential							

**Analytical Summary - Inorganics in Groundwater**

**Area 4/16 - I-Beam Building Area**

**Voluntary Site Investigation**

**AlliedSignal Industrial Complex**

**South Bend, Indiana**

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCLJNORG

Criteria Comparison 1996 VRP vs. 2011 NGA President

## Analytical Summary - VOCs in Soils

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Plant 1/9 - Former USTs

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP014	05GP015	05GP017	05GP018	05GP019
SAMPLE ID	05PS01408	05PS01508	05PS01708	05PS01804	05PS01908
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/08/96	10/08/96	10/07/96
DEPTH (ft)	Tier II	8.00	8.00	8.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	< 0.06	< 0.06	< 0.06
Trichloroethane		25.73	< 0.06	< 0.06	< 0.06
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Date: 09/28/99

## Voluntary Site Investigation

## AlliedSignal Industrial Complex South Bend, Indiana

05-08-018 05-

**South Bend, Indiana**

	SITE	06GP018	06GP061	06GP061	06GP061	06GP070
	SAMPLE ID	05PS01814	05PS06104	05PS06108	05PS06116	05PS07004
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/07/96	11/15/96	11/15/96	11/15/96
	DEPTH (ft)	Tier II	14.00	4.00	8.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	0.42
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.42</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

## Analytical Summary - VOCs in Soils

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Date: 09/28/99

**Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

South Bend, Indiana							
	SITE	05GP070	05GP070	05GP070	05GP071	05GP071	05GP071
	SAMPLE ID	05PS07008	05PS07012	05PS07016	05PS07108	05PS07112	
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	12/09/96	12/09/96	12/09/96	12/09/96
	DEPTH (ft)	Tier II	8.00	12.00	16.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	0.14	0.12	0.1	<0.1	<0.1
Trichloroethane		26.73	0.65	0.41	0.24	0.26	0.23
<b>Sum of Concentrations</b>		<b>0.79</b>	<b>0.53</b>	<b>0.34</b>	<b>0.20</b>	<b>0.23</b>	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

| For RCL VOC

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - VOCs in Soils

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## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

## South Bend, Indiana

05 GP071

CONSTITUENT (Units in mg/kg)	SITE	06GP071	06GP072	06GP072	06GP072
	SAMPLE ID	05PS07116	05PS07204	05PS07208	05PS07212
	DATE	1996 VRP	12/09/96	12/12/96	12/12/96
	DEPTH (ft)	Tier II	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	0.26	<0.1	<0.1	<0.1
Sum of Concentrations		0.26	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For BCI View

1

videos

## Analytical Summary - TPH/DROs in Soils

Plant 1/9 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
05GP014	10/07/96	4.00	Prim	<10
05GP014	10/07/96	8.00	Prim	[9300] Quench Oil Tank – 10,000 mg/kg criteria
05GP014	10/07/96	14.00	Prim	<10
05GP015	10/07/96	4.00	Prim	17
05GP015	10/07/96	8.00	Prim	<10
05GP015	10/07/96	14.00	Prim	55
05GP016	10/07/96	6.00	Prim	<10
05GP016	10/07/96	10.00	Prim	<10
05GP016	10/07/96	14.00	Prim	<10
05GP017	10/07/96	4.00	Prim	60
05GP017	10/07/96	8.00	Prim	15
05GP017	10/07/96	12.00	Prim	<10
05GP018	10/07/96	4.00	Prim	30
05GP018	10/07/96	8.00	Prim	24
05GP018	10/07/96	8.00	Dup 1	19
05GP018	10/07/96	14.00	Prim	<10
05GP061	11/15/96	4.00	Prim	<10
05GP061	11/15/96	8.00	Prim	<10
05GP061	11/15/96	16.00	Prim	<10
05GP071	12/09/96	8.00	Prim	<10
05GP071	12/09/96	12.00	Prim	<10
05GP071	12/09/96	16.00	Prim	<10
05GP072	12/12/96	4.00	Prim	<10
05GP072	12/12/96	8.00	Prim	<10
05GP072	12/12/96	12.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

{ } = Greater than Action Level

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater**  
 Plant 179 - Former USTs  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT	(Units in ug/l)	SITE	05GP071
		SAMPLE ID	1998 VRP
		DATE	Tier II
		RESULT TYPE	Non-Residential Primary
Vinyl chloride	10	1231	
Xylenes (total)	204400	12:B	
1,2,4-Trimethylbenzene	5.11E + 3	5.4	
cis-1,2-Dichloroethene	1022	4.3	
trans-1,2-Dichloroethene	2040	7.9	
Trichloroethylene	260	210	
<b>Sum of Concentrations</b>		<b>301.30</b>	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

(+) = Greater than Action Level The following qualifier(s) exist: B

For RCL VDT

Criteria Comparison 1998 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Plant 6/16 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	01CPT016	05GP001	05GP001	05GP001	05GP001
	SAMPLE ID	01CP501617	05PS00104	05PS00112	05PS00116	05GP00101
	DATE	1996 VRP	07/25/97	10/05/96	10/05/96	10/05/96
	DEPTH (ft)	Tier II	17.00	4.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	< 0.05	< 0.1 E	< 0.1	< 0.1	< 0.05
Toluene	1000	< 0.05	< 0.25 E	< 2.7	< 5.4	< 0.05
Ethyl benzene	1000	< 0.05	< 0.25 E	40	62	< 0.05
Xylene (total)	1000	< 0.05	< 0.25 E	22	35	< 0.05
Isopropylbenzene	1.0E + 03	< 0.05	< 0.25 E	78	110	< 0.05
n-Propylbenzene	1.00E + 03	< 0.05	< 0.25 E	< 2.7	< 5.4	< 0.05
1,3,5-Trimethylbenzene	1.00E + 03	< 0.05	< 0.25 E	55	81	< 0.05
1,2,4-Trimethylbenzene	1.00E + 3	< 0.05	< 0.25 E	49	59	< 0.05
Naphthalene	10000	< 0.05	< 0.25 E	2.8	< 5.4	1.67#
Acenaphthene	1.0E + 04	...	...	...	...	11#
2-Methylnaphthalene	10000	< 0.1	< 0.5 E	< 5.3	< 11	< 0.1
1,1-Dichloroethene	0.08	< 0.05	< 0.1 E	< 0.1	< 0.1	< 0.05
cis-1,2-Dichloroethane	102.49	< 0.05	< 0.1 E	< 0.1	< 0.1	< 0.05
1,1,1-Trichloroethane	1000	< 0.05	< 0.1 E	< 0.1	< 0.1	< 0.05
Tetrachloroethane	8.01	< 0.05	< 0.1 E	< 0.1	< 0.1	< 0.05
Trichloroethene	25.73	0.68	< 0.1 E	< 0.1	< 0.1	< 0.05
Sum of Concentrations		0.58	0.00	246.80	347.00	12.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. ? = Duplicate records found, Data review required.

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Plant 6/16 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP002	05GP002	05GP002	05GP003	05GP003
	SAMPLE ID	05PS00200	05PS00212	05PS00216	05PS00304	05PS00312
	DATE	1996 VRP	10/05/96	10/05/96	10/05/96	10/05/96
	DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	1000	<2.8	<2.8	<6.3	<0.25	<0.25
Ethyl benzene	1000	17	57	66	2	0.61
Xylene (total)	1000	<2.8	<2.6	<5.3	0.5	<0.25
Isopropylbenzene	1.0E+03	31	110	130	2.8	1.6
n-Propylbenzene	1.00E+03	<2.8	<2.6	<5.3	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<2.8	<2.6	<5.3	0.67	<0.25
1,2,4-Trimethylbenzene	1.00E+03	6.5	23	18	0.62	0.82
Naphthalene	10000	<2.8	<2.6	<5.3	<0.25	<0.25
Acenaphthene	1.0E+04					
2-Methylnaphthalene	10000	<5.6	<5.3	<11	<0.5	<0.5
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	[0.17]	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		54.50	190.00	212.00	6.76	3.03

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

II = Greater than Action Level

For RCL VOC

Criteria Comparison: 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

iedSignal Industrial Com  
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## **South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	05GP003	05GP003	05GP004	05GP004	05GP004
	SAMPLE ID	05PS00316	05GP00301	05PS00408	05PS00412	05PS00416
	DATE	1996 VRP	10/05/96	11/06/97	10/05/96	10/05/96
DEPTH (ft)	Tier II	16.00	1.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.05	<0.1	<0.1
Toluene		1000	<0.62	<0.05	<3.1	<0.25
Ethyl benzene		1000	7.2	<0.05	39	4.9
Xylene (total)		1000	1.3	<0.05	<3.1	<0.25
Isopropylbenzene		1.0E+03	18	<0.05	32	1.6
n-Propylbenzene		1.00E+03	<0.62	<0.05	<3.1	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.62	<0.05	<3.1	<0.25
1,2,4-Trimethylbenzene		1.00E+3	7	<0.05	5.7	0.66
Naphthalene		10000	<0.62	<0.33#	<3.1	<0.25
Acenaphthene		1.0E+04		<0.33#		
2-Methylnaphthalene		10000	<1	<0.1	<6.3	<0.6
1,1-Dichloroethene		0.08	<0.1	<0.05	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.05	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.05	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.05	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.05	<0.1	<0.1
Sum of Concentrations		33.50	0.00	76.70	7.05	124.60

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP005	05GP005	05GP005	05GP005	05GP006
	SAMPLE ID	05PS00508	05PS00512	05PS00516	05GP00601	05PS00604
	DATE	1996 VRP	10/05/96	10/05/96	10/05/96	11/08/97
	DEPTH (ft)	Tier II	8.00	12.00	16.00	1.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.1	<0.1	<0.06
Toluene		1000	<1.4	<27	<5.4	<0.06
Ethyl benzene		1000	21	230	150	<0.06
Xylene (total)		1000	<1.4	<27	<5.4	<0.05
Isopropylbenzene		1.0E+03	13	77	150	<0.05
n-Propylbenzene		1.00E+03	<1.4	<27	<5.4	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<1.4	<27	<5.4	<0.05
1,2,4-Trimethylbenzene		1.00E+03	<1.4	<27	<5.4	<0.05
Naphthalene		10000	<1.4	<27	<5.4	<0.33#
Acenaphthene		1.0E+04	...	...	...	<0.33#
2-Methylnaphthalene		10000	<2.9	<64	<11	<0.1
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.05
Trichloroethene		26.73	<0.1	<0.1	<0.1	<0.05
Sum of Concentrations		34.00	307.00	318.00	0.00	172.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

Criteria Comparison: 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
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SITE	05GP006	05GP006	05GP007	05GP007	05GP007
SAMPLE ID	05PS00608	05PS00612	05PS00708	05PS00712	05PS00715
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/05/96	10/05/96	10/05/96
	DEPTH (ft)	Tier II	8.00	12.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Benzene		4.77	<0.1	0.17	<0.1
Toluene		1000	<0.25	0.36	<0.25
Ethyl benzene		1000	3.3	1.4	1.6
Xylene (total)		1000	<0.25	2.2	<0.25
Isopropylbenzene		1.0E+03	5.2	1.7	2.8
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04	---	---	---
2-Methylnaphthalene		10000	<0.5	0.91	<0.5
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1
Sum of Concentrations			8.50	6.74	4.10
					1.06
					39.84
Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed					
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP007	05GP008	05GP008	05GP008	05GP008	05GP008
SAMPLE ID	05GP00701	05PS00008	05PS00812	05PS00813.5	05PS00904	
CONSTITUENT (Units: in mg/kg)	DATE	1996 VRP	11/06/96	10/06/96	10/06/96	10/06/96
DEPTH (ft)	Tier II	1.00	8.00	12.00	13.50	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.06	0.79	2	<0.1	<0.1
Toluene	1000	<0.05	<0.6	<3	<0.25	<0.25
Ethyl benzene	1000	<0.06	26	54	1.9	<0.25
Xylene (total)	1000	<0.05	4.5	<3	0.26	<0.25
Isopropylbenzene	1.0E+03	<0.06	8.2	8	1.6	<0.25
n-Propylbenzene	1.00E+03	<0.06	2.5	9.4	0.38	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.06	<0.6	<3	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.06	1.2	<3	0.73	<0.25
Naphthalene	10000	<0.33#	<0.6	<3	<0.25	<0.25
Acenaphthene	1.0E+04	<0.33	--	--	--	--
2-Methylnaphthalene	10000	<0.1	<1.2	<6.0	<0.5	<0.5
1,1-Dichloroethene	0.08	<0.06	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.06	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.05	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.06	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.05	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	40.19	67.40	4.74	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOL

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
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 AlliedSignal Industrial Complex  
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	SITE	05GP009	05GP009	05GP009	05GP011	05GP013
CONSTITUENT	SAMPLE ID	05PS00908	05QD00908	05PS00916	05PS01116	05PS01304
(Units in mg/kg)	DATE	1996 VRP	10/06/96	10/06/96	10/06/96	10/06/96
DEPTH (ft)	Tier II	8.00	8.00	16.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Duplicate_1	Primary	Primary	Primary
Benzene		4.77	<0.1 UJ	0.3	[6]	<13
Toluene		1000	<0.25	<0.25	<2.7	<13
Ethyl benzene		1000	4.4	3.8	120	47
Xylene (total)		1000	<0.25	<0.25	<2.7	55
Isopropylbenzene		1.0E+03	0.99 J	5.9	19	<13
n-Propylbenzene		1.00E+03	<0.25	<0.25	6.0	23
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<2.7	16
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	6	34
Naphthalene		10000	<0.25	<0.25	<2.7	0.74#
Acenaphthene		1.0E+04				<0.33
2-Methylnaphthalene		10000	<0.5	<0.5	<5.5	<13
1,1-Dichloroethane		0.08	<0.1	<0.1	<0.1	<13
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<13
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<13
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<13
Trichloroethene		25.73	<0.1	<0.1	<0.1	<13
Sum of Concentrations		5.39	10.00	155.60	177.74	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed  
 # = Constituent in more than one test method, highest result reported.    () = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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AlliedSignal Industrial Complex

**South Bend, Indiana**

05GP013 05

South Bend, Indiana						
CONSTITUENT (Units in mg/kg)	SITE	06GP013	06GP013	06GP028	06GP028	05QP02B
	SAMPLE ID	06P601312	06P601315	05PS02804	06P602812	05QD02812
	DATE	1996 VRP	10/06/96	10/06/96	10/15/96	10/15/96
DEPTH (ft)	Tier II	12.00	15.00	4.00	12.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Benzene	4.77	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	1000	<0.25	<0.53	<0.25	30	41
Ethyl benzene	1000	<0.25	23	<0.25	20	26
Xylene (total)	1000	<0.25	3.4	<0.25	7.3	8.7
Isopropylbenzene	1.0E+03	<0.25	16	<0.25	<1.3 UJ	6.4
n-Propylbenzene	1.00E+03	<0.25	4	<0.25	7.2	7.7
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.53	<0.25	<1.3	<1.3
1,2,4-Trimethylbenzene	1.00E+03	<0.25	4.8	<0.25	6.4	6.5
Naphthalene	10000	<0.25	<0.53	<0.25	<1.3	<1.3
Aceanaphthene	1.0E+04					
2-Methylnaphthalene	10000	<0.5	<1.1	<0.5	<2.6	<2.6
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	61.20	0.00	70.90	96.30

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison, 1996 VRR-Tier II Non-Resident

## Analytical Summary - VOCs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units: mg/kg)	SITE	05GP028	05GP029	05GP029	05GP029	05GP029
	SAMPLE ID	05PS02815	05PS02908	05PS02910	05PS02912	05QD02912
	DATE	1996 VRP	10/15/96	10/16/96	10/16/96	10/16/96
	DEPTH (ft)	Tier II	15.00	8.00	10.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Benzene	4.77	<0.1	<0.1	<0.1	<0.13 INE	<0.06
Toluene	1000	35	<0.25	<0.25	<0.13 INE	<0.06
Ethyl benzene	1000	26	<0.25	0.63	<0.13 INE	<0.06
Xylenes (total)	1000	8.4	<0.25	1	0.6 JIN	<0.1
Isopropylbenzene	1.0E + 03	8.1	<0.25	<0.25	<0.13 INE	<0.01
n-Propylbenzene	1.00E + 03	6.6	<0.25	<0.25	0.34 JIN	<0.01
1,3,5-Trimethylbenzene	1.00E + 03	6.4	<0.25	0.37	0.55 JIN	0.1
1,2,4-Trimethylbenzene	1.00E + 3	6.3	<0.25	0.77	1.1 JIN	0.21
Naphthalene	10000	<0.25	<0.25	<0.25	1.1#	<0.06
Acenaphthene	1.0E + 04				<0.33	
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<1.3 INE	<0.5
1,1-Dichloroethane	0.08	<0.1	<0.1	<0.1	<0.13 INE	<0.06
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.13 INE	<0.06
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.13 INE	<0.05
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.13 INE	<0.05
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.13 INE	<0.06
Sum of Concentrations		94.80	0.00	2.77	3.59	0.31

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
 # = Constituent in more than one test method, highest result reported.

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

### **Analytical Summary - VOCs in Soils**

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## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

South Bend, Indiana

06GP029

CONSTITUENT (Units in mg/kg)	SITE	05GP029	05GP029	05GP031	05GP031	05GP031
	SAMPLE ID	05QD02912	05PS02915	05PS03108	05PS03112	05QD03112
	DATE	1996 VRP	10/16/96	10/16/96	10/16/96	10/16/96
DEPTH (ft)	Tier II	12.00	16.00	8.00	12.00	12.00
RESULT TYPE	Non-Residential	Duplicate 2	Primary	Primary	Primary	Duplicate 1
Benzene		4.77	<0.05	<0.1	<0.1	<0.1 *
Toluene		1000	<0.05	<0.25	<7.8	30 *
Ethyl benzene		1000	<0.05	<0.25	14	40 *
Xylene (total)		1000	<0.05	<0.25	86	310 *
Isopropylbenzene		1.0E + 03	<0.05	<0.25	<7.8	42 *
n-Propylbenzene		1.00E + 03	<0.05	<0.25	<7.8	12 *
1,3,5-Trimethylbenzene		1.00E + 03	0.21 J	<0.25	80	81 *
1,2,4-Trimethylbenzene		1.00E + 03	0.10 J	<0.25	120	280 *
Naphthalene		10000	<0.05	<0.25	20	30 *
Acenaphthene		1.0E + 04	---	---	---	---
2-Methylnaphthalene		10000	<0.1	<0.6	19	<21 *
1,1-Dichloroethane		0.08	<0.05	<0.1	<0.1	<0.1 *
cis-1,2-Dichloroethene		102.49	<0.05	<0.1	<0.1	<0.1 *
1,1,1-Trichloroethane		1000	<0.05	<0.1	<0.1	<0.1 *
Tetrachloroethene		8.01	<0.05	<0.1	<0.1	<0.1 *
Trichloroethene		25.73	<0.05	<0.1	<0.1	<0.1 *
Sum of Concentrations		0.31	0.00	319.00	825.00	234.20

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed

For RCL View

Criteria Comparison: 1996 VRP vs. Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Plant 6/16 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP031	05GP034	05GP034	05GP034	05GP046
	SAMPLE ID	05PS03116	05PS03404	05PS03412	05PS03416	05PS04608
	DATE	1996 VRP	10/16/96	10/16/96	10/16/96	10/16/96
DEPTH (ft)	Tier II	16.00	4.00	12.00	16.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.1	<0.1	<0.1
Toluene		1000	3.8	<0.25	<0.25	<0.25
Ethyl benzene		1000	2.8	<0.25	<0.25	<0.25
Xylene (total)		1000	14	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	5.9	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<2.6	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	11	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	28	<0.25	<0.25	<0.25
Naphthalene		10000	3.1	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04				
2-Methylnaphthalene		10000	<5.2	<0.5	<0.5	<0.5
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		68.60	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit --- =Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	05GP046	05GP046	05GP047	05GP047	05GP047
		SAMPLE ID	05PS04612	05PS04615	05PS04704	05PS04708	05PS04712
DATE		1995 VRP	11/11/98	11/11/98	11/11/98	11/11/98	11/11/98
DEPTH (ft)	Tier II		12.00	15.00	4.00	8.00	12.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene			4.77	<0.1	<0.1	<0.1 E	<0.05
Toluene		1000	<0.25	<0.25	<0.25 E	<0.05	<0.25
Ethyl benzene		1000	<0.25	<0.25	<0.25 E	<0.05	<0.25
Xylene (total)		1000	<0.25	<0.25	<0.25 E	<0.1	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25 E	<0.01	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25 E	<0.01	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25 E	<0.01	<0.25
1,2,4-Trimethylbenzene		1.00E+3	<0.25	<0.25	<0.25 E	<0.01	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25 E	<0.05#	<0.25
Aceanaphthalene		1.0E+04				<0.33	
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5 E	<0.1	<0.5
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1 E	<0.05	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1 E	<0.05	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1 E	<0.05	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1 E	<0.06	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1 E	<0.05	<0.1
Sum of Concentrations			0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

Criteria Comparison 1995 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	05GP047	05GP048	05GP048	05GP048	05GP048
		SAMPLE ID	05PS04715	05PS04804	05PS04808	05PS04811	05PS04814
		DATE	1996 VRP	11/11/96	11/11/96	11/11/96	11/11/96
		DEPTH (ft)	Tier II	15.00	4.00	8.00	11.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.29	<0.21	<0.05	<45
Toluene		1000	<0.25	<0.74	1.1 J	0.17	[1200]
Ethyl benzene		1000	<0.25	<0.74	0.77 J	0.15	600
Xylole (total)		1000	<0.25	1.7	2.6 J	0.8	[2500]
Isopropylbenzene		1.0E + 03	<0.25	<0.74	<0.53	<0.01	160
n-Propylbenzene		1.00E + 03	<0.25	<0.74	<0.53	<0.01	<110
1,3,5-Trimethylbenzene		1.00E + 03	<0.25	2.8	<0.53	0.14	580
1,2,4-Trimethylbenzene		1.00E + 03	<0.25	1.4	<0.53	0.14	870
Naphthalene		10000	<0.25	<0.74	<0.53	<0.05#	<110
Acenaphthene		1.0E + 04				<0.33	
2-Methylnaphthalene		10000	<0.5	<1.6	<1.1	<0.1	<220
1,1-Dichloroethene		0.08	<0.1	<0.29	<0.21	<0.05	<45
cis-1,2-Dichloroethene		102.49	<0.1	15	<0.21	0.1	[180]
1,1,1-Trichloroethene		1000	<0.1	<0.29	<0.21	<0.05	<45
Tetrachloroethene		8.01	<0.1	<0.29	<0.21	<0.06	<45
Trichloroethene		26.73	<0.1	7.6	<0.21	<0.05	<45
Sum of Concentrations			0.00	28.50	4.37	1.30	6090.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. [ ] = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP049	05GP049	05GP049	05GP049	05GP050
	SAMPLE ID	05PS04904	05PS04906	05PS04912	05PS04915	05PS05004
	DATE	1996 VRP	11/12/96	11/12/96	11/12/96	11/12/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.1	<0.1	<0.05	<0.1	<0.1
Toluene	1000	<0.25	<0.25	<0.05	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.05	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.1	<0.25	<0.25
Isopropylbenzene	1.0E + 03	<0.25	<0.25	<0.01	<0.25	<0.25
n-Propylbenzene	1.00E + 03	<0.25	<0.25	<0.01	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E + 03	<0.25	<0.25	<0.01	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E + 03	<0.25	<0.25	<0.01	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.05#	<0.25	<0.25
Acenaphthene	1.0E + 04	...	...	<0.33	...	...
2-Methylnaphthalene	10000	<0.5	<0.5	<0.1	<0.5	<0.5
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.05	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.05	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.05	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.05	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.05	<0.1	<0.1
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported.

EPA RCL VOC

Saskia Comparison 1996 VRP - All Non-Residential

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

AlliedSignal Industrial Complex

**South Bend, Indiana**

05GP050

CONSTITUENT (Units in mg/kg)	SITE	05GP050	05GP050	05GP050	05GP051	05GP051
	SAMPLE ID	05PS05008	05PS05012	05PS05016	05PS05104	05PS05108
	DATE	1996 VRP	11/12/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.1	<0.05	<0.1	<0.1	<0.1
Toluene	1000	<0.25	0.068	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.05	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.05#	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04		<0.33			
2-Methylnaphthalene	10000	<0.5	<0.1	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.08	<0.1	<0.05	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.05	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.05	<0.1	<0.1	<0.1
Trichloroethylene	25.73	<0.1	<0.05	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.17	0.00	0.00	0.00

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

## Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

SITE	06GP051	06GP051	06GP052	06GP052	06GP052
SAMPLE ID	06PS05112	06PS05115	06PS05204	06PS05208	06QD05208
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/12/96	11/12/96	11/12/96
DEPTH (ft)	RESULT TYPE	Tier II	12.00	15.00	4.00
		Non-Residential	Primary	Primary	Primary
					Duplicate 1
Benzene		4.77	<0.05	<0.1	<0.1
Toluene		1000	<0.05	<0.25	<0.25
Ethyl benzene		1000	<0.05	<0.25	<0.25
Xylene (total)		1000	<0.1	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.01	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.01	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.25
Naphthalene		10000	<0.05#	<0.25	<0.25
Aceanaphthene		1.0E+04	<0.33	---	---
2-Methylnaphthalene		10000	<0.1	<0.5	<0.5
1,1-Dichloroethane		0.08	<0.05	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	0.061	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.05	<0.1	<0.1
Tetrachloroethene		8.01	<0.05	<0.1	<0.1
Trichloroethene		26.73	<0.05	<0.1	<0.1
Sum of Concentrations		0.06	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP052	05GP052	05GP053	05GP053	05GP053
SAMPLE ID	05PS05212	05PS05216	05PS05304	05PS05308	05PS05312
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II:	12.00	15.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.05	<0.1
Toluene		1000	<0.25	<0.05	<0.25
Ethyl benzene		1000	<0.25	<0.05	<0.25
Xylene (total)		1000	<0.25	<0.1	<0.25
Isopropylbenzene		1.0E +03	<0.25	<0.01	<0.25
n-Propylbenzene		1.00E +03	<0.25	<0.01	<0.25
1,3,5-Trimethylbenzene		1.00E +03	<0.25	<0.01	<0.25
1,2,4-Trimethylbenzene		1.00E +03	<0.25	<0.01	<0.25
Naphthalene		10000	<0.25	<0.05#	<0.25
Acenaphthene		1.0E +04	---	<0.33	<0.33
2-Methylnaphthalene		10000	<0.5	<0.1	<0.5
1,1-Dichloroethene		0.08	<0.1	<0.05	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	0.06 J	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.05	<0.1
Tetrachloroethene		8.01	<0.1	<0.05	<0.1
Trichloroethene		25.73	<0.1	<0.05	<0.1
Sum of Concentrations		0.00	0.06	0.00	0.00
<hr/>					
Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed					
# = Constituent in more than one test method, highest result reported.					
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - VOCs in Soils  
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South Bend, Indiana**

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	SITE	05GP053	05GP062	05GP062	05GP062	05GP063
	SAMPLE ID	05PS05316	05PS06204	06PS06208	05PS06216	
CONSTITUENT	(Units in mg/kg)	DATE	11/12/96	11/15/96	11/15/96	11/15/96
	DEPTH (ft)	Tier II	16.00	4.00	8.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.1	<0.1	<0.1
Toluene		1000	<0.25	<0.25	<0.25	<0.25
Ethyl benzene		1000	<0.25	<0.25	<0.25	0.38
Xylene (total)		1000	<0.25	<0.25	<0.25	0.56
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.05
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	0.86
1,2,4-Trimethylbenzene		1.00E+03	0.32	<0.25	<0.25	0.24
Naphthalene		10000	<0.25	<0.25	<0.25	<0.33#
Acenaphthene		1.0E+04				<0.33#
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.33#
1,1-Dichloroethane		0.08	<0.1	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.05
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.05
Tetrachloroethane		8.01	<0.1	<0.1	<0.1	<0.05
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.05
Sum of Concentrations			0.32	0.00	0.00	0.38
						1.92

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ... = Not analyzed

# = Constituent with more than one test method, highest result reported.

**Analytical Summary - VOCs in Soils  
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CONSTITUENT (Units in mg/kg)	SITE	05GP064	05GP064	05GP064	05GP064	05GP064
	SAMPLE ID	05PS06404	05PS06408	05PS06412	05PS06416	05QD06416
	DATE	1996 VRP	11/16/96	11/16/96	11/16/96	11/16/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Benzene		4.77	<0.1	<0.06	<0.1	<0.1
Toluene		1000	<0.25	<0.05	<0.25	<0.25
Ethyl benzene		1000	<0.25	0.18	<0.25	<0.25
Xylene (total)		1000	<0.25	0.26	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.05	<0.26	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.05	<0.26	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	0.11	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.05	<0.25	<0.25
Naphthalene		10000	<0.25	<0.33#	<0.25	<0.25
Acenaphthene		1.0E+04	---	<0.33	---	---
2-Methylnaphthalene		10000	<0.5	<0.33#	<0.6	<0.6
1,1-Dichloroethane		0.08	<0.1	<0.05	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	<0.1	<0.05	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.05	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.05	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.05	<0.1	<0.1
Sum of Concentrations		0.00	0.56	0.00	0.29	0.00

Analytical Summary - VOCs in Soils  
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	SITE	06GP008	07GP005	07GP008	07GP008	07GP008
CONSTITUENT	SAMPLE ID	06PS00816	07PS00504	07PS00804	07PS00808	07PS00812
(Units: mg/kg)	DATE	1996 VRP	12/16/96	11/14/96	11/17/96	11/17/96
	DEPTH (ft)	Tier II	16.00	4.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Benzene		4.77	<0.05	<0.05	<0.1	<0.05
Toluene		1000	<0.05	<0.05	<0.25	<0.05
Ethyl benzene		1000	0.41	<0.05	<0.25	<0.05
Xylene (total)		1000	<0.05	<0.1	<0.25	<0.05
Isopropylbenzene		1.0E+03	<0.05	<0.01	<0.25	<0.05
n-Propylbenzene		1.00E+03	<0.05	<0.01	<0.25	<0.05
1,3,5-Trimethylbenzene		1.00E+03	0.38	<0.01	<0.25	<0.05
1,2,4-Trimethylbenzene		1.00E+03	1.2	<0.01	<0.25	<0.05
Naphthalene		10000	0.89#	<0.05#	<0.25	<0.05#
Acenaphthene		1.0E+04	<0.33#	<0.33		<0.33
2-Methylnaphthalene		10000	<0.33#	<0.1	<0.5	<0.1#
1,1-Dichloroethene		0.08	<0.05	<0.05	<0.1	<0.05
cis-1,2-Dichloroethene		102.49	<0.05	<0.05	<0.1	<0.05
1,1,1-Trichloroethane		1000	<0.05	<0.05	<0.1	<0.05
Tetrachloroethene		8.01	<0.05	<0.05	<0.1	<0.05
Trichloroethene		26.73	<0.05	<0.05	<0.1	<0.05
Sum of Concentrations		2.88	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

# = Constituent found in more than one test method, highest result reported. ? = Duplicate record found, Data review required.

RCL VOC

Constituent 1000 VRP Tier Non-Residential

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

South Bend, Indiana

South Bend, Indiana						
	SITE	07GP008	09GP001	09GP001	09GP001	09GP002
CONSTITUENT	SAMPLE ID	07PS00819	09PS00104	09PS00108	09PS00118	09PS00204
	DATE	1996 VRP	11/17/96	11/16/96	11/16/96	11/16/96
	DEPTH (ft)	Tier II	19.00	4.00	8.00	18.00
	RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.1	<0.1	<0.05
Toluene		1000	<0.25	<0.25	<0.25	<0.05
Ethyl benzene		1000	<0.25	<0.25	<0.25	<0.05
Xylene (total)		1000	<0.25	<0.25	<0.25	<0.05
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.05
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.05
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.05
Naphthalene		10000	<0.25	<0.25	<0.25	<0.05
Acenaphthene		1.0E+04	...	...	...	...
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.1
1,1-Dichloroethene		0.08	<0.1	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethene		1000	<0.1	<0.1	<0.1	<0.05
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.05
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.05
Sum of Concentrations		0.00	0.00	0.00	34.19	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Soils  
Plant 6/16 - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	09GP002	09GP002	09GP002	09GP003	09GP003
	SAMPLE ID	09PS00208	09PS00212	09PS00218	09PS00304	09PS00308
	DATE	1996 VRP	11/17/96	11/17/96	11/17/96	07/18/97
DEPTH (ft)	Tier II	8.00	12.00	18.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.1	<0.1	<0.1	<0.05	<0.05
Toluene	1000	<0.25	<0.25	<0.25	<0.05	<0.05
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.05	<0.05
Xylenes (total)	1000	<0.25	0.6	<0.25	<0.05	<0.05
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.05	<0.05
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.05	<0.05
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.05	<0.05
1,2,4-Trimethylbenzene	1.00E+03	<0.25	0.34	<0.25	<0.05	<0.05
Naphthalene	10000	<0.25	<0.25	<0.25	<0.05	<0.05
Acenaphthene	1.0E+04					
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.1	<0.1	<0.1	<0.05	<0.05
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.05	<0.05
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.05	<0.05
Tetrachloroethene	8.01	0.1	<0.1	<0.1	<0.05	<0.05
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.05	<0.05
Sum of Concentrations		0.10	0.94	0.00	0.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	09GP003	09GP003	09GP003	09GP004	09GP004
SAMPLE ID	14PS00312	14OD00312	09PS00318	09P600404	09P600406
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	07/16/97	07/16/97	07/16/97
DEPTH (ft)	Tier II	12.00	12.00	18.00	4.00
RESULT-TYPE	Non-Residential	Primary	Duplicate_1	Primary	Primary
Benzene		4.77	<0.05	<0.05	<0.05
Toluene		1000	<0.05	<0.05	<0.05
Ethyl benzene		1000	<0.05	<0.05	<0.05
Xylene (total)		1000	<0.05 UJ	0.19 J	100
Isopropylbenzene		1.0E+03	<0.05	<0.05	<0.05
n-Propylbenzene		1.00E+03	<0.05 UJ	<0.05 J	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.05 J	0.054 J	<0.05
1,2,4-Trimethylbenzene		1.00E+3	0.085 J	0.19 J	2.5
Naphthalene		10000	<0.05	<0.05	3.2
Acenaphthene		1.0E+04	...	...	...
2-Methylnaphthalene		10000	<0.1	<0.1	<0.1
1,1-Dichloroethene		0.08	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene		102.49	<0.05	<0.05	<0.05
1,1,1-Trichloroethane		1000	<0.05	<0.05	<0.05
Tetrachloroethene		8.01	<0.05	<0.05	1.5
Trichloroethene		26.73	<0.05	<0.05	2.5
Sum of Concentrations			0.11	0.45	179.40
					0.11
					1.36
<hr/>					
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
<hr/>					
For RCL VOC					
Criteria Comparison 1996 VRP Tier II Non-Residential					

## Analytical Summary - VOCs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	09GP004	09GP004	09GP005	09GP005	09GP005
	SAMPLE ID	09PS00416	09QD00416	09PS00502	09PS00508	09PS00514
DATE	1996 VRP	07/16/97	07/16/97	07/16/97	07/16/97	07/16/97
DEPTH (ft)	Tier II	16.00	16.00	2.00	8.00	14.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Benzene		4.77	<0.05	<0.05	<0.05	<0.05
Toluene		1000	<0.05	<0.05	<0.05	<0.05
Ethyl benzene		1000	<0.05	<0.05	<0.05	<0.05
Xylene (total)		1000	<0.05	<0.05	<0.05	<0.05
Isopropylbenzene		1.0E + 03	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene		1.00E + 03	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene		1.00E + 03	<0.05	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene		1.00E + 03	<0.05	<0.05	<0.05	<0.05
Naphthalene		10000	<0.05	<0.05	<0.05	<0.05
Acenaphthene		1.0E + 04				
2-Methylnaphthalene		10000	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene		0.08	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene		102.49	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane		1000	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene		8.01	0.24	0.37	<0.05	<0.05
Trichloroethene		25.73	0.26	0.35	<0.05	<0.05
Sum of Concentrations		0.49	0.72	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL NOC [REDACTED] Maria C [REDACTED] VRP [REDACTED] II No [REDACTED] iden [REDACTED]

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	SITE	09GP005	09GP006	09GP006	09GP006	09GP006
	SAMPLE ID	09QD00614	09PS00604	09PS00610	09PS00618	09QD00618
	DATE	1996 VRP	07/16/97	07/17/97	07/17/97	07/17/97
	DEPTH (ft)	Tier II	14.00	4.00	10.00	18.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Duplicate 1
Benzene	4.77	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Ethyl benzene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (total)	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Isopropylbenzene	1.0E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene	1.00E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	1.00E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene	1.00E + 3	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	10000	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	1.0E + 04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	102.49	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	8.01	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	25.73	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential
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## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	09GP007	09GP007	09GP007	09GP007	09GP008
	SAMPLE ID	09PS00704	09PS00708	09PS00712	09PS00717	09PS00808
	DATE	1996 VRP	07/17/97	07/17/97	07/17/97	07/17/97
	DEPTH (ft)	Tier II	4.00	8.00	12.00	17.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Ethyl benzene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene (total)	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Isopropylbenzene	1.0E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene	1.00E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	1.00E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene	1.00E + 03	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	10000	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	1.0E + 04					
2-Methylnaphthalene	10000	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethene	0.08	<0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	102.49	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	1000	<0.05	<0.05	<0.05	0.51	<0.05
Tetrachloroethene	8.01	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	26.73	<0.05	<0.05	<0.05	<0.05	0.92
Sum of Concentrations		0.00	0.00	0.00	0.51	0.92

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	09GP008	09GP008	09HA001	09HA001	09HA001
SAMPLE ID	09PS00812	09PS00816	09HA00104	01HA00107	09HA00109
CONSTITUENT (Units in mg/kg)	1996 VRP	07/18/97	07/18/97	07/25/97	07/25/97
DEPTH (ft)	Tier II	12.00	16.00	4.00	7.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Benzene	4.77	<0.05	<0.05	<0.10	<0.05
Toluene	1000	<0.05	<0.05	<0.25	<0.05
Ethyl benzene	1000	<0.05	<0.05	<0.10	<0.05
Xylene (Total)	1000	0.69	<0.05	<2.50	<0.05
Isopropylbenzene	1.0E+03	<0.05	<0.05	<0.10	<0.05
n-Propylbenzene	1.00E+03	<0.05	<0.05	<0.25	<0.05
1,3,5-Trimethylbenzene	1.00E+03	<0.05	<0.05	<0.25	<0.05
1,2,4-Trimethylbenzene	1.00E+03	<0.05	<0.05	<0.25	<0.05
Naphthalene	10000	<0.05	<0.05	<0.25	<0.05
Acenaphthene	1.0E+04	---	---	---	<2.5
2-Methylnaphthalene	10000	<0.1	<0.1	<0.5	<0.1
1,1-Dichloroethane	0.08	<0.05	<0.05	<0.25	<0.05
cis-1,2-Dichloroethene	102.49	0.1	0.30	<0.10	0.27
1,1,1-Trichloroethane	1000	0.31	0.39	<0.25	<0.05
Tetrachloroethene	8.01	0.15	0.16	<0.10	<0.05
Trichloroethene	25.73	3.3	6.5	0.14	0.17
Sum of Concentrations		4.56	6.36	0.14	0.44
					5.33
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed					
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

## Analytical Summary - VOCs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

SUGAR BEAN, Indiana							
	SITE	17GP001	17GP001	17GP001	17GP001	17GP002	17GP002
	SAMPLE ID	17PS00104	17PS00108	17PS00112	17PS00118	17PS00204	
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/12/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)		Tier II	4.00	6.00	12.00	18.00	4.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.05	<0.1	[80]	<0.1
Toluene		1000	<0.25	<0.05	<0.25	700	<0.25
Ethyl benzene		1000	<0.25	<0.05	<0.25	280	<0.25
Xylene (total)		1000	<0.25	<0.1	<0.25	720	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.01	<0.25	<29	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.01	<0.25	<29	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.01	<0.25	<29	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.01	<0.25	<29	<0.25
Naphthalene		10000	<0.25	<0.05#	<0.25	<29	<0.25
Acenaphthene		1.0E+04	---	<0.33	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.1#	<0.5	<68	<0.5
1,1-Dichloroethane		0.08	<0.1	<0.05	<0.1	<12	<0.1
cis-1,2-Dichloroethane		102.49	<0.1	<0.05	<0.1	<12	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.05	<0.1	<12	<0.1
Tetrachloroethene		8.01	<0.1	<0.05	<0.1	<12	<0.1
Trichloroethene		25.73	<0.1	<0.05	<0.1	<12	<0.1
Sum of Concentrations			0.00	0.00	0.00	1780.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported. || = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP-Troll Non-Resident

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	17GP002	17GP002	17GP003	17GP003	17GP003		
SAMPLE ID	17PS00208	17PS00212	17PS00304	17PS00308	17PS00314		
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	12/13/96	12/13/96	12/16/96		
	DEPTH (ft)	Tier II	8.00	12.00	4.00		
	RESULT TYPE	Non-Residential	Primary	Primary	Primary		
					Primary		
Benzene		4.77	<0.1	<0.05 E	<0.1	<0.1	<0.05
Toluene		1000	<0.25	<0.05 E	<0.25	<0.25	<0.05
Ethyl benzene		1000	<0.25	<0.05 E	<0.25	<0.25	<0.05
Xylene (total)		1000	<0.25	<0.1 E	<0.25	<0.25	<0.05
Isopropylbenzene		1.0E+03	<0.25	<0.01 E	<0.25	<0.25	<0.05
n-Propylbenzene		1.00E+03	<0.25	<0.01 E	<0.25	<0.25	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.01 E	<0.25	<0.25	<0.05
1,2,4-Trimethylbenzene		1.00E+3	<0.25	0.065 I	<0.25	<0.25	<0.05
Naphthalene		10000	<0.25	<0.05# E	<0.25	<0.25	<0.33#
Acenaphthene		1.0E+04		<0.33			<0.33
2-Methylnaphthalene		10000	<0.5	<0.1# E	<0.5	<0.5	<0.33#
1,1-Dichloroethene		0.08	<0.1	<0.05 E	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene		102.49	<0.1	<0.05 E	<0.1	<0.1	<0.05
1,1,1-Trichloroethane		1000	<0.1	<0.05 E	<0.1	<0.1	<0.05
Tetrachloroethylene		8.01	<0.1	<0.05 E	<0.1	<0.1	<0.05
Trichloroethylene		25.73	<0.1	<0.05 E	<0.1	<0.1	<0.05
Sum of Concentrations		0.00	0.07	0.00	0.00	0.00	

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. The following qualifier(s) exist: E, J, U, I, N, \*

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	(Units: n.mg/kg)	SITE	01CPT016	05GP001	05GP001	05GP001	05GP001
		SAMPLE ID	01CPS01617	05PS00104	05PS00112	05PS00116	05GP00101
		DATE	1996 VRP	07/26/97	10/06/96	10/06/96	10/06/96
		DEPTH (ft)	Tier II	17.00	4.00	12.00	16.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene			1.0E + 04		---	---	11
Acenaphthylene				<0.6	<2.6 E	<27	<54
Anthracene			1.00E + 04	---	---	---	2.8
Benz (a) anthracene			103.8				5.6
Benz (b) pyrene			69.85	---	---	---	6.5
Benz (b) fluoranthene			354.98				7.7
Benz (ghi) perylene							5.1
Benz (k) fluoranthene			3789.12				3.8
Chrysene			1.00E + 04		---	---	7.4
Dibenzo(a,h)anthracene			69.86		---	---	4.0
Fluoranthene			10000	---	---	---	21
Fluorene			1.00E + 04		---	---	0.94
Indeno (1,2,3-cd) pyrene			629.17	---	---	---	5.2
Naphthalene			10000	<0.05	<0.25 E	2.8	<5.4
Phenanthrene			1.00E + 04	---	---	---	12
Pyrene			10000		---	---	16
Sum of Concentrations			0.00	0.00	2.80	0.00	111.94

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported.

For RCL\_PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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SITE	05GP003	05GP003	05GP004	05GP004	05GP004
SAMPLE ID	05PS00316	05GP00301	05PS00408	05PS00412	05PS00416
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/05/96	11/06/97	10/05/96
DEPTH (ft)	Tier II	16.00	1.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04	--	<0.33	--
Acenaphthylene			<5.2	0.42#	<3.1
Anthracene		1.00E+04	--	<0.33	--
Benzo (a) anthracene		103.8	--	<0.33	--
Benzo (b) pyrene		69.85	--	<0.33	--
Benzo (b) fluoranthene		354.09	--	<0.33	--
Benzo (ghi) perylene			--	<0.33	--
Benzo (k) fluoranthene		3759.12	--	<0.33	--
Chrysene		1.00E+04	--	<0.33	--
Dibenzo (a,h) anthracene		69.86	--	<0.33	--
Fluoranthene		10000	--	<0.33	--
Fluorene		1.00E+04	--	<0.33	--
Indeno (1,2,3-cd) pyrene		629.17	--	<0.33	--
Naphthalene		10000	<0.62	<0.33#	<3.1
Phenanthrene		1.00E+04	--	<0.33	--
Pyrene		10000	--	<0.33	--
Sum of Concentrations		0.00	0.42	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

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## **Voluntary Site Investigation**

**iedSignal Industrial Com**  
South Bend, Indiana

South Bend, Indiana						
	SITE	05GP005	05GP005	05GP005	05GP005	05GP006
CONSTITUENT (Units in mg/kg)	SAMPLE ID	05PS00508	05PS00512	05PS00516	05GP00501	05PS00604
DATE	DATE	10/05/96	10/05/96	10/05/96	11/06/97	10/05/96
DEPTH (ft.)	DEPTH (ft.)	8.00	12.00	16.00	1.00	4.00
RESULT TYPE	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E + 04	---	---	<0.33	---
Acenaphthylene		<14	<470	<54	0.36#	<66
Anthracene		1.00E + 04	---	---	<0.33	---
Benzo (a) anthracene		103.8	---	---	<0.33	---
Benzo (b) pyrene		69.85	---	---	<0.33	---
Benzo (b) fluoranthene		354.98	---	---	<0.33	---
Benzo (ghi) perylene		---	---	---	<0.33	---
Benzo (k) fluoranthene		3769.12	---	---	<0.33	---
Chrysene		1.00E + 04	---	---	<0.33	---
Dibenz (a,h) anthracene		69.88	---	---	<0.33	---
Fluoranthene		10000	---	---	<0.33	---
Fluorene		1.00E + 04	---	---	<0.33	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	<0.33	---
Naphthalene		10000	<1.4	<27	<6.4	<0.33#
Phenanthrene		1.00E + 04	---	---	<0.33	---
Pyrene		10000	---	---	<0.33	---
Sum of Concentrations		0.00	0.00	0.00	0.36	0.00

## Analytical Summary - PNAs in Soils

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South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	05GP006	05GP006	05GP007	05GP007	05GP007
		SAMPLE ID	05PS00608	05PS00612	05PS00708	05PS00712	05PS00715
		DATE	1996 VRP	10/05/96	10/05/96	10/05/96	10/05/96
		DEPTH (ft)	Tier II	8.00	12.00	8.00	12.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene			1.0E +04	--	--	--	--
Acenaphthylene			--	<2.5	<2.5	<2.5	<2.5
Anthracene			1.00E +04	--	--	--	--
Benz (a) anthracene			103.8	--	--	--	--
Benz (b) pyrene			69.85	--	--	--	--
Benz (b) fluoranthene			354.98	--	--	--	--
Benz (ghi) perylene			--	--	--	--	--
Benz (k) fluoranthene			3759.12	--	--	--	--
Chrysene			1.00E +04	--	--	--	--
Dibenzo (a,h) anthracene			69.88	--	--	--	--
Fluoranthene			10000	--	--	--	--
Fluorene			1.00E +04	--	--	--	--
Indeno (1,2,3-cd) pyrene			629.17	--	--	--	--
Naphthalene			10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene			1.00E +04	--	--	--	--
Pyrene			10000	--	--	--	--
Sum of Concentrations			0.00	0.00	0.00	0.00	0.84
<hr/>							
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
<span style="float: left;">RCL</span> <span style="float: right;">Maria C. Carrizo 1996 VRP Tier II-N Reside</span>							

Analytical Summary - PNAs in Soils

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South Bend, Indiana						
SITE	05GP007	05GP008	05GP008	05GP008	05GP009	
SAMPLE ID	05GP00701	05PS00808	05PS00812	05PS00813.5	05PS00904	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/06/97	10/08/96	10/08/96	10/08/96
DEPTH (ft)	Tier II	1.00	8.00	12.00	13.50	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04	< 0.33	---	---	---
Acenaphthylene			< 0.33#	< 6	< 30	< 2.5
Anthracene		1.00E+04	< 0.33	---	---	< 2.5
Benz(a)anthracene		103.8	< 0.33	---	---	---
Benz(b)pyrene		69.85	< 0.33	---	---	---
Benz(b)fluoranthene		354.98	< 0.33	---	---	---
Benz(g,h)perylene			< 0.33	---	---	---
Benz(k)fluoranthene		3759.12	< 0.33	---	---	---
Chrysene		1.00E+04	< 0.33	---	---	---
Dibenzo(a,h)anthracene		69.86	< 0.33	---	---	---
Fluoranthene		10000	0.43	---	---	---
Fluorene		1.00E+04	< 0.33	---	---	---
Indeno(1,2,3-cd)pyrene		629.17	< 0.33	---	---	---
Naphthalene		10000	< 0.33#	< 0.6	< 3	< 0.26
Phenanthrene		1.00E+04	< 0.33	---	---	---
Pyrene		10000	< 0.33	---	---	---
Sum of Concentrations		0.43	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted      <=Not detected at indicated reporting limit      ---=Not analyzed

# = Constituent in more than one test method, highest result reported.

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP009	05GP009	05GP009	05GP011	05GP013
SAMPLE ID	05PS00908	05QD00908	05PB00916	05PS01115	05PS01304
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/06/96	10/06/96	10/06/96
	DEPTH (ft)	Tier II	8.00	8.00	16.00
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary
				Primary	Primary
Acenaphthene		1.0E +04	---	---	<0.33
Acenaphthylene		12.5	<2.5	<2.7	<13#
Anthracene		1.00E +04	---	---	<0.33
Benzo (a) anthracene		103.8	---	---	<0.33
Benzo (b) pyrene		69.86	---	---	<0.33
Benzo (b) fluoranthene		354.98	---	---	<0.33
Benzo (ghi) perlylene		---	---	---	<0.33
Benzo (k) fluoranthene		3769.12	---	---	<0.33
Chrysene		1.00E +04	---	---	<0.33
Dibenzo (a,h) anthracene		69.86	---	---	<0.33
Fluoranthene		10000	---	---	<0.33
Fluorene		1.00E +04	---	---	<0.33
Indeno (1,2,3-cd) pyrene		629.17	---	---	<0.33
Naphthalene		10000	<0.26	<0.25	<2.7
Phenanthrene		1.00E +04	---	---	<0.33
Pyrene		10000	---	---	<0.33
Sum of Concentrations		0.00	0.00	0.00	0.74
					0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

RCL [REDACTED] Maria Comparison 6 VRP [REDACTED] II Non-Residential [REDACTED]

## Analytical Summary - PNAs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP013	05GP013	05GP028	05GP028	05GP028
SAMPLE ID	05PS01312	05PS01315	05PS02804	05PS02812	05PD02812
CONSTITUENT (Units in mg/kg)	1996 VRP	10/06/96	10/06/96	10/15/96	10/15/96
DEPTH (ft)	Tier II	12.00	15.00	4.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
				Duplicate 1	
Acenaphthene	1.0E+04	---	---	---	---
Acenaphthylene		<2.5	<5.3	<2.5	<13
Anthracene	1.00E+04	---	---	---	---
Benz (a) anthracene	103.8				
Benz (b) pyrene	69.85	---	---	---	---
Benz (b) fluoranthene	354.98	---	---	---	---
Benz (ghi) perylene		---	---	---	---
Benz (k) fluoranthene	3759.12	---	---	---	---
Chrysene	1.00E+04	---	---	---	---
Dibenzo (a,h) anthracene	69.86	---	---	---	---
Fluoranthene	10000	---	---	---	---
Fluorene	1.00E+04	---	---	---	---
Indeno (1,2,3-cd) pyrene	629.17	---	---	---	---
Naphthalene	10000	<0.25	<0.53	<0.25	<1.3
Phenanthrene	1.00E+04	---	---	---	---
Pyrene	10000				
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00
<hr/>					
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed					
<hr/>					
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential				

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AlliedSignal Industrial Complex

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CONSTITUENT (Units in mg/kg)	SITE	05GP028	05GP029	05GP029	05GP029	05GP029
	SAMPLE ID	05PS02815	05PS02908	05PS02910	05PS02912	05QD02912
	DATE	1996 VRP	10/16/96	10/16/96	10/16/96	10/16/96
	DEPTH (ft)	Tier II	15.00	8.00	10.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Acenaphthene		1.0E + 04	---	---	---	< 0.33
Acenaphthylene		< 2.5	< 2.5	< 2.5	< 2.5	< 2.5# INF
Anthracene		1.00E + 04	---	---	---	< 0.33
Benzo (a) anthracene		103.8	---	---	---	< 0.33
Benzo (b) pyrene		69.85	---	---	---	< 0.33
Benzo (b) fluoranthene		354.98	---	---	---	< 0.33
Benzo (ghi) perylene		---	---	---	---	< 0.33
Benzo (k) fluoranthene		3759.12	---	---	---	< 0.33
Chrysene		1.00E + 04	---	---	---	< 0.33
Dibenzo (a,h) anthracene		69.88	---	---	---	< 0.33
Fluoranthene		10000	---	---	---	< 0.33
Fluorene		1.00E + 04	---	---	---	< 0.33
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	< 0.33
Naphthalene		10000	< 0.25	< 0.26	< 0.26	1.1#
Phenanthrene		1.00E + 04	---	---	---	< 0.33
Pyrene		10000	---	---	---	< 0.33
Sum of Concentrations		0.00	0.00	0.00	1.10	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCI-PNA

Criteria Comparison - 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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## Voluntary Site Investigation

#### AlliedSignal Industrial Complex

South Bend, Indiana

**South Bend, Indiana**

05GP029

CONSTITUENT (Units in mg/kg)	SITE	05GP029	05GP029	05GP031	05GP031	05GP031
	SAMPLE ID	05QD02912	05PS02915	05PS03108	05PS03112	05QD03112
	DATE	1996 VRP	10/16/96	10/16/96	10/16/96	10/16/96
DEPTH (ft)	Tier II	12.00	15.00	8.00	12.00	12.00
RESULT TYPE	Non-Residential	Duplicate 2	Primary	Primary	Primary	Duplicate 3
Acenaphthalene	1.0E+04	---	---	---	---	---
Acenaphthylene		<0.5	<2.5	<78	<110	<62
Anthracene	1.00E+04	---	---	---	---	---
Benzo (a) anthracene	103.8	---	---	---	---	---
Benzo (b) pyrene	69.85	---	---	---	---	---
Benzo (b) fluoranthene	354.98	---	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Benzo (k) fluoranthene	3759.12	---	---	---	---	---
Chrysene	1.00E+04	---	---	---	---	---
Dibenzo (a,h) anthracene	69.86	---	---	---	---	---
Fluoranthene	10000	---	---	---	---	---
Fluorene	1.00E+04	---	---	---	---	---
Indeno (1,2,3-cd) pyrene	629.17	---	---	---	---	---
Naphthalene	10000	<0.05	<0.25	20	30	9.7
Phenanthrene	1.00E+04	---	---	---	---	---
Pyrene	10000	---	---	---	---	---
Sum of Concentrations	0.00	0.00	20.00	30.00	8.70	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

	SITE	05GP031	05GP034	05GP034	05GP034	05GP046
	SAMPLE ID	05PS03116	05PS03404	05PS03412	05PS03416	05PS04608
CONSTITUENT	(Units in mg/kg)	DATE	10/16/96	10/16/96	10/16/96	10/16/96
	DEPTH (ft)	Tier II	16.00	4.00	12.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E + 04	---	---	---	---
Acenaphthalene		---	< 28	< 2.5	< 2.5	< 2.5
Anthracene		1.00E + 04	---	---	---	---
Benzo (a) anthracene		103.9	---	---	---	---
Benzo (b) pyrene		68.86	---	---	---	---
Benzo (b) fluoranthene		354.99	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E + 04	---	---	---	---
Dibenz (a,h) anthracene		65.85	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E + 04	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	3.1	< 0.26	< 0.26	< 0.26
Phenanthrene		1.00E + 04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		3.10	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL-PNA

Criteria Comparison 10/26 VRP Tier II Non-Residential

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## **Voluntary Site Investigation**

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### **South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	05GP046	05GP046	05GP047	05GP047	05GP047
	SAMPLE ID	05PS04612	05PS04615	05PS04704	05PS04708	05PS04712
	DATE	1996 VRP	11/11/96	11/11/96	11/11/96	11/11/96
	DEPTH (ft)	Tier II	12.00	15.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthalene	1.0E + 04	---	---	---	<0.33	---
Acenaphthylene		<2.5	<2.5	<2.5 E	<0.54	<2.5
Anthracene	1.00E + 04	---	---	---	<0.33	---
Benzo (a) anthracene	103.8				<0.33	
Benzo (b) pyrene	69.85	---	---	---	<0.33	---
Benzo (b) fluoranthene	354.98				<0.33	
Benzo (ghi) perylene		---	---	---	<0.33	---
Benzo (k) fluoranthene	3759.12	---	---	---	<0.33	
Chrysene	1.00E + 04	---	---	---	<0.33	---
Dibenzo (a,h) anthracene	69.86	---	---	---	<0.33	
Fluoranthene	10000	---	---	---	<0.33	---
Fluorene	1.00E + 04				<0.33	
Indeno (1,2,3-cd) pyrene	629.17	---	---	---	<0.33	---
Naphthalene	10000	<0.25	<0.25	<0.26 E	<0.06#	<0.26
Phenanthrene	1.00E + 04	---	---	---	<0.33	---
Pyrene	10000	---	---	---	<0.33	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

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## AlliedSignal Industrial Complex

## **South Bend, Indiana**

05GP047

**Values represent total concentrations unless noted**      < = Not detected at indicated reporting limit      --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL\_PNA

Criteria Comparison-1996 VRP-Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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CONSTITUENT	(Units in mg/kg)	SITE	06GP049	05GP049	05GP049	05GP049	05GP049	05GP050
		SAMPLE ID	05PS04904	05PS04908	05PS04912	05PS04915	05PS05004	
		DATE	1998 VRP	11/12/96	11/12/96	11/12/96	11/12/96	11/12/96
		DEPTH (ft)	Tier II	4.00	8.00	12.00	15.00	4.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene			1.0E + 04	---	---	<0.33	---	---
Aconaphthylene			<2.5	<2.5	<0.5#	<2.5	<2.5	<2.5
Anthracene			1.00E + 04	---	---	<0.33	---	---
Benz(a)anthracene			103.8	---	---	<0.33	---	---
Benz(b) pyrene			69.85	---	---	<0.33	---	---
Benz(b)fluoranthene			354.98	---	---	<0.33	---	---
Benz(ghi)perylene			---	---	<0.33	---	---	---
Benz(k)fluoranthene			3759.12	---	---	<0.33	---	---
Chrysene			1.00E + 04	---	---	<0.33	---	---
Dibenz(a,h)anthracene			69.86	---	---	<0.33	---	---
Fluoranthene			10000	---	---	<0.33	---	---
Fluorene			1.00E + 04	---	---	<0.33	---	---
Indeno(1,2,3-cd)pyrene			629.17	---	---	<0.33	---	---
Naphthalene			10000	<0.25	<0.25	<0.05#	<0.25	<0.25
Phenanthrene			1.00E + 04	---	---	<0.33	---	---
Pyrene			10000	---	---	<0.33	---	---
Sum of Concentrations			0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

Criteria Comparison 1998 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP050	05GP050	05GP050	05GP061	05GP061
	SAMPLE ID	05PS05008	05PS05012	05PS05016	05PS06104	05PS06108
	DATE	1996 VRP	11/12/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Aconaphthene		1.0E +04	---	< 0.33	---	---
Aconaphthylene			< 2.5	< 0.5#	< 2.5	< 2.5
Anthracene		1.00E +04	---	< 0.33	---	---
Benzo (a) anthracene		103.8	---	< 0.33	---	---
Benzo (b) pyrene		69.85	---	< 0.33	---	---
Benzo (b) fluoranthene		354.98	---	< 0.33	---	---
Benzo (ghi) perylene			---	< 0.33	---	---
Benzo (k) fluoranthene		3759.12	---	< 0.33	---	---
Chrysene		1.00E +04	---	< 0.33	---	---
Dibenz (a,h) anthracene		69.86	---	< 0.33	---	---
Fluoranthene		10000	---	< 0.33	---	---
Fluorene		1.00E +04	---	< 0.33	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	< 0.33	---	---
Naphthalene		10000	< 0.25	< 0.05#	< 0.25	< 0.25
Phenanthrene		1.00E +04	---	< 0.33	---	---
Pyrene		10000	---	< 0.33	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

RCL [REDACTED] Criteria Comparison [REDACTED] VRP [REDACTED] Tier II Non-Residential [REDACTED]

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

## Criteria Comparison 1996 VRP Tier II Non-Residential

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SITE	05GP052	05GP052	05GP053	05GP053	05GP053
SAMPLE ID	05PS05212	05PS05215	05PS05304	05PS05308	05PS05312
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II	12.00	15.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04	---	<0.33	---
Acenaphthalene			<2.5	<0.5#	<2.5
Anthracene		1.00E+04	---	<0.33	---
Benzo (a) anthracene		103.8		<0.33	---
Benzo (b) pyrene		69.85	---	<0.33	---
Benzo (b) fluoranthene		354.98		<0.33	---
Benzo (ghi) perylene			<0.33	---	---
Benzo (k) fluoranthene		3769.12		<0.33	---
Chrysene		1.00E+04	---	<0.33	---
Dibenzo (a,h) anthracene		69.88	---	<0.33	---
Fluoranthene		10000	---	<0.33	---
Fluorene		1.00E+04	---	<0.33	---
Indeno (1,2,3-cd) pyrene		629.17	---	<0.33	---
Naphthalene		10000	<0.25	<0.05#	<0.26
Phenanthrene		1.00E+04	---	<0.33	---
Pyrene		10000	---	<0.33	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found more than one test method, highest result reported.

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE	05GP053	05GP062	05GP062	05GP062	05GP063
		SAMPLE ID	05PS05316	05PS06204	05PS06208	05PS06216
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/12/96	11/15/96	11/15/96	11/15/96
DEPTH (ft.)	Tier II	16.00	4.00	8.00	16.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04				<0.33
Acenaphthylene			<2.5	<2.5	<2.5	<0.33#
Anthracene		1.00E+04	---	---	---	<0.33
Benzo (a) anthracene		103.8	---	---	---	<0.33
Benzo (b) pyrene		69.86	---	---	---	<0.33
Benzo (b) fluoranthene		364.98	---	---	---	<0.337
Benzo (ghi) perylene		---	---	---	---	<0.33
Benzo (k) fluoranthene		3759.12	---	---	---	<0.337
Chrysene		1.00E+04	---	---	---	<0.33
Dibenzo (a,h) anthracene		69.86	---	---	---	<0.33
Fluoranthene		10000	---	---	---	<0.33
Fluorene		1.00E+04	---	---	---	<0.33
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	<0.33
Naphthalene		10000	<0.25	<0.25	<0.25	<0.26
Phenanthren		1.00E+04	---	---	---	<0.33
Pyrene		10000	---	---	---	<0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00
<hr/>						
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
# = Constituent in more than one test method, highest result reported. ? = Duplicate records found, Data review required.						
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential					

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CONSTITUENT (Units in mg/kg)	SITE	05GP064	05GP064	05GP064	05GP064	05GP064
	SAMPLE ID	05PS06404	05PS06408	05PS06412	05PS06416	05QD06416
	DATE	1996 VRP	11/16/96	11/16/96	11/16/96	11/16/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Acenaphthalene	1.0E+04	<0.33				
Acenaphthylene		<2.5	<0.33#	<2.5	<2.5	<2.5
Anthracene	1.00E+04	---	<0.33	---	---	---
Benzo (a) anthracene	103.8		<0.33			
Benzo (b) pyrene	69.85	---	<0.33	---	---	---
Benzo (b) fluoranthene	354.98	---	<0.33?	---	---	---
Benzo (ghi) perylene		---	<0.33	---	---	---
Benzo (k) fluoranthene	3759.12	---	<0.33?	---	---	---
Chrysene	1.00E+04	---	<0.33	---	---	---
Dibenz (a,h) anthracene	69.85		<0.33			
Fluoranthene	10000	---	<0.33	---	---	---
Fluorene	1.00E+04	---	<0.33	---	---	---
Indeno (1,2,3-cd) pyrene	629.17	---	<0.33	---	---	---
Naphthalene	10000	<0.25	<0.33#	<0.25	<0.25	<0.25
Phenanthrene	1.00E+04	---	<0.33	---	---	---
Pyrene	10000	---	<0.33?	---	---	---
<b>Sum of Concentrations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method; highest result reported. ? = Duplicate record found; Data review required.

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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## Voluntary Site Investigation

#### **AlliedSignal Industrial Complex**

South Bend, Indiana

**South Bend, Indiana**

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	06GP008	07GP005	07GP008	07GP008	07GP008
	SAMPLE ID	06PS00816	07PS00504	07PS00804	07PS00808	07PS00812
	DATE	1996 VRP	12/16/96	11/14/96	11/17/96	11/17/96
DEPTH (ft)	Tier II	16.00	4.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthalene	1.0E + 04	<0.33	<0.33	---	<0.33	---
Acenaphthylene		<0.33#	<0.5#	<2.5	<0.5#	<2.5
Anthracene	1.00E + 04	<0.33	<0.33	---	<0.33	---
Benz (a) anthracene	103.8	<0.33	<0.33	---	<0.33	---
Benzo (b) pyrene	69.86	<0.33	<0.33	---	<0.33	---
Benzo (b) fluoranthene	354.99	<0.33#	<0.33	---	<0.33#	---
Benzo (ghi) perylene		<0.33	<0.33	---	<0.33	---
Benzo (k) fluoranthene	3759.12	<0.33?	<0.33	---	<0.33?	---
Chrysene	1.00E + 04	<0.33	<0.33	---	<0.33	---
Dibenzo (a:h) anthracene	69.86	<0.33	<0.33	---	<0.33	---
Fluoranthene	10000	0.45	<0.33	---	<0.33	---
Fluorene	1.00E + 04	<0.33	<0.33	---	<0.33	---
Indeno (1,2,3-cd) pyrene	629.17	<0.33	<0.33	---	<0.33	---
Naphthalene	10000	0.89#	<0.05#	<0.25	<0.05#	<0.25
Phenanthrene	1.00E + 04	<0.33	<0.33	---	<0.33	---
Pyrene	10000	<0.33	<0.33	---	<0.33	---
Sum of Concentrations		1.34	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted      <=Not detected at indicated reporting limit      --- = Not analyzed

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For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**



**Analytical Summary - PNAs in Soils  
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CONSTITUENT (Units in mg/kg)	SITE	09GP002	09GP002	09GP002	09GP003	09GP003
	SAMPLE ID	09PS00208	09PS00212	09PS00218	09PS00304	09PS00308
	DATE	1996 VRP	11/17/96	11/17/96	11/17/96	07/18/97
DEPTH (ft)	Tier II	8.00	12.00	18.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene	1.0E + 04	---	---	---	---	---
Acenaphthylene		< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Anthracene	1.00E + 04	---	---	---	---	---
Benz(a)anthracene	103.8	---	---	---	---	---
Benz(b)pyrene	69.85	---	---	---	---	---
Benz(b)fluoranthene	354.98	---	---	---	---	---
Benz(ghi)perylene		---	---	---	---	---
Benz(k)fluoranthene	3759.12	---	---	---	---	---
Chrysene	1.00E + 04	---	---	---	---	---
Dibenz(a,h)anthracene	69.86	---	---	---	---	---
Fluoranthene	10000	---	---	---	---	---
Fluorene	1.00E + 04	---	---	---	---	---
Indeno(1,2,3-cd) pyrene	629.17	---	---	---	---	---
Naphthalene	10000	< 0.25	< 0.25	< 0.25	< 0.05	< 0.05
Phenanthrene	1.00E + 04	---	---	---	---	---
Pyrene	10000	---	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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CONSTITUENT (Units in mg/kg)	SITE	09GP003	09GP003	09GP003	09GP004	09GP004
	SAMPLE ID	14P500312	14CD00312	09PS00318	09PS00404	09PS00408
	DATE	1996 VRP	07/16/97	07/16/97	07/16/97	07/16/97
	DEPTH (ft)	Tier II	12.00	12.00	18.00	4.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Acenaphthene		1.0E + 04				
Acenaphthylene		<0.6	<0.5	<0.5	<0.5	<0.5
Anthracene		1.00E + 04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		68.85	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E + 04	---	---	---	---
Dibenz (a,h) anthracene		69.88	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E + 04	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.05	<0.05	3.2	<0.05
Phenanthrene		1.00E + 04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	3.20	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

Coloris Comparison T008 VRP Tier II Non-Residential

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AlliedSignal Industrial Complex

South Bend, Indiana

SITE	09GP004	09GP004	09GP005	09GP005	09GP005
SAMPLE ID	09PS00416	09QD00416	09PS00502	09PS00508	09PS00514
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	07/16/97	07/16/97	07/16/97
DEPTH (ft)	Tier II	16.00	16.00	2.00	8.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary
Acenaphthene		1.0E+04	---	---	---
Acenaphthylene		<0.5	<0.5	<0.5	<0.5
Anthracene		1.00E+04	---	---	---
Benzo (a) anthracene		103.8	---	---	---
Benzo (b) pyrene		69.85	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---
Benzo (ghi) perylene		---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---
Chrysene		1.00E+04	---	---	---
Dibenz (a,h) anthracene		69.86	---	---	---
Fluoranthene		10000	---	---	---
Fluorene		1.00E+04	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---
Naphthalene		10000	<0.05	<0.05	<0.05
Phenanthrene		1.00E+04	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential
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## Analytical Summary - PNAs in Soils

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#### Vinyl Chloride Investigation

**South Bend, Indiana**

SOUTH BEND, INDIANA

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	09GP005	09GP006	09GP006	09GP006	09GP006
	SAMPLE ID	09QD00514	09PS00804	09PS00610	09PS00618	09QD00618
	DATE	1996 VRP	07/16/97	07/17/97	07/17/97	07/17/97
DEPTH (ft)	Tier II	14.00	4.00	10.00	18.00	18.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Duplicate 1
Acenaphthene		1.0E+04				
Acenaphthylene			<0.6	<0.6	<0.6	<0.6
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8				
Benzo (b) pyrene		89.85	---	---	---	---
Benzo (b) fluoranthene		254.88				
Benzo (ghi) perylene						
Benzo (k) fluoranthene						
Chrysene		1.00E+04	---	---	---	---
Dibenz (a,h) anthracene		69.86				
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E+04	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.06	<0.06	<0.06	<0.06
Phenanthrene		1.00E+04	---	---	---	---
Pyrene		10000				
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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Criteria Comparisons - 1926 VRR Tier II Non-Residential

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AlliedSignal Industrial Complex

South Bend, Indiana

SITE	09GP007	09GP007	09GP007	09GP007	09GP008
SAMPLE ID	09PS00704	09PS00708	09PS00712	09PS00717	09PS00808
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	07/17/97	07/17/97	07/17/97
DEPTH (ft)	Tier II	4.00	8.00	12.00	17.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E + 04			
Acenaphthylene		<0.5	<0.5	<0.5	<0.5
Anthracene		1.00E + 04	---	---	---
Benz(a)anthracene		103.8	---	---	---
Benz (b) pyrene		69.85	---	---	---
Benz (b) fluoranthene		354.98	---	---	---
Benz (ghi) perylene		3759.12	---	---	---
Benz (k) fluoranthene		10000	---	---	---
Chrysene		1.00E + 04	---	---	---
Dibenz(a,h)anthracene		69.86	---	---	---
Fluoranthene		10000	---	---	---
Fluorene		1.00E + 04	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---
Naphthalene		10000	<0.05	<0.05	<0.05
Phenanthrene		1.00E + 04	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential
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CONSTITUENT (Units in mg/kg)	SITE	09GP008	09GP008	09HA001	09HA001	09HA001
	SAMPLE ID	09PS00812	09PS00816	09HA00104	01HA00107	09HA00109
	DATE	1996 VRP	07/18/97	07/18/97	07/26/97	07/26/97
DEPTH (ft)	Tier II	12.00	16.00	4.00	7.00	9.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E +04	---	---	---	< 2.5
Acenaphthylene			< 0.5	< 0.5	< 0.25	< 0.5
Anthracene		1.00E +04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.86	---	---	---	---
Benzo (b) fluoranthene		354.88	---	---	---	---
Benzo (ghi) perylene			---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E +04	---	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Fluorene		1.00E +04	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	< 0.05	< 0.05	< 0.25	< 0.05
Phenanthrene		1.00E +04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

See RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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CONSTITUENT	(Units in mg/kg)	SITE	17GP001	17GP001	17GP001	17GP001	17GP002
		SAMPLE ID	17PS00104	17PS00108	17PS00112	17PS00118	17PS00204
		DATE	1996 VRP	11/12/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II		4.00	8.00	12.00	18.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E + 04	---	<0.33	---	---	---
Acenaphthylene			<2.5	<0.5#	<2.5	<290	<2.6
Anthracene		1.00E + 04	---	<0.33	---	---	---
Benz(a)anthracene		103.8		<0.33	---	---	---
Benzo (b) pyrene		69.86	---	<0.33	---	---	---
Benzo (b) fluoranthene		364.98	---	<0.33	---	---	---
Benzo (ghi) perylene			---	<0.33	---	---	---
Benzo (k) fluoranthene		3759.12	---	<0.33	---	---	---
Chrysene		1.00E + 04	---	<0.33	---	---	---
Dibeno (a,h) anthracene		69.86		<0.33	---	---	---
Fluoranthene		10000	---	<0.33	---	---	---
Fluorene		1.00E + 04		<0.33	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	<0.33	---	---	---
Naphthalene		10000	<0.25	<0.05#	<0.25	<29	<0.26
Phenanthrene		1.00E + 04	---	<0.33	---	---	---
Pyrene		10000		<0.33	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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Plant 6/16 - Former USTs

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units: mg/kg)	SITE	17GP002	17GP002	17GP003	17GP003	17GP003
	SAMPLE ID	17PS00208	17PS00212	17PS00304	17PS00306	17PS00314
	DATE	1996 VRP	12/13/96	12/13/96	12/16/96	12/16/96
	DEPTH (ft)	Tier II	8.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene	1.0E +04	---	<0.33	---	---	<0.33
Acenaphthylene		<2.5	<0.6# E	<2.5	<2.5	<0.33#
Anthracene	1.00E +04	---	<0.33	---	---	<0.33
Benzo (a) anthracene	103.8		<0.33	---	---	<0.33
Benzo (b) pyrene	69.85	---	<0.33	---	---	<0.33
Benzo (b) fluoranthene	354.98		<0.33	---	---	<0.33#
Benzo (ghi) perylene		---	<0.33	---	---	<0.33
Benzo (k) fluoranthene	3759.12		<0.33	---	---	<0.33#
Chrysene	1.00E +04	---	<0.33	---	---	<0.33
Dibenz (a,h) anthracene	69.88		<0.33	---	---	<0.33
Fluoranthene	10000	---	<0.33	---	---	<0.33
Fluorene	1.00E +04		<0.33	---	---	<0.33
Indeno (1,2,3-ef) pyrene	629.17	---	<0.33	---	---	<0.33
Naphthalene	10000	<0.25	<0.05# E	<0.25	<0.25	<0.33#
Phenanthrene	1.00E +04	---	<0.33	---	---	<0.33
Pyrene	10000		<0.33	---	---	<0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found more than one test method, highest result reported. ? = Duplicate record found, Data review required. The following qualifier(s) exist: E, I, N, \*

RCL [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] Maria C. [REDACTED] S VR [REDACTED] II Non-Residential [REDACTED] [REDACTED]

## Analytical Summary - TPH/DROs in Soils

Plant 6/16 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO:	
				(mg/kg)	
<b>1996 VRPTier II Non-Residential</b>					6000
05GP005	10/05/96	8.00	Prim	24	24.00
05GP005	10/05/96	12.00	Prim	140	140.00
05GP005	10/05/96	16.00	Prim	220	220.00
05GP006	10/05/96	4.00	Prim	1100	1100.00
05GP006	10/05/96	8.00	Prim	310	310.00
05GP006	10/05/96	12.00	Prim	50	50.00
05GP008	10/06/96	8.00	Prim	280 PI	280.00
05GP008	10/06/96	12.00	Prim	132 PI	132.00
05GP008	10/06/96	13.50	Prim	160 PI	160.00
05GP010	10/06/96	4.00	Prim	300 JPI	300.00
05GP010	10/06/96	4.00	Dup 1	117	117.00
05GP010	10/06/96	12.00	Prim	270 PI	270.00
05GP010	10/06/96	16.00	Prim	170 PI	170.00
05GP011	10/06/96	4.00	Prim	260C PI	2600.00
05GP011	10/06/96	8.00	Prim	120 PI	120.00
05GP011	10/06/96	12.00	Prim	45 J	45.00
05GP012	10/06/96	4.00	Prim	<10	0.00
05GP012	10/06/96	10.00	Prim	1900 PI	1900.00
05GP012	10/06/96	15.00	Prim	74	74.00
05GP027	10/15/96	4.00	Prim	94	94.00
05GP027	10/15/96	8.00	Prim	<10	0.00
05GP027	10/15/96	8.00	Dup 1	<10	0.00
05GP027	10/15/96	16.00	Prim	480 PI	480.00
05GP030	10/16/96	8.00	Prim	190 PI	190.00
05GP030	10/16/96	12.00	Prim	22	22.00
05GP030	10/16/96	16.00	Prim	410 PI	410.00
05GP032	10/16/96	8.00	Prim	<10	0.00
05GP032	10/16/96	12.00	Prim	980 PI	980.00
05GP032	10/16/96	12.00	Dup 1	890	890.00
05GP032	10/16/96	16.00	Prim	430 PI	430.00
05GP033	10/16/96	8.00	Prim	65	65.00
05GP033	10/16/96	12.00	Prim	1900 PI	1900.00
05GP033	10/16/96	16.00	Prim	330 PI	330.00

Values represent total concentrations unless noted --&lt;=Not detected at indicated reporting limit ---=Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 6/16 - Former USTs  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
1996 VRP Tier II Non-Residential				6000
05GP034	10/16/96	4.00	Prim	56
05GP034	10/16/96	12.00	Prim	300 PI
05GP034	10/16/96	16.00	Prim	<10
05GP046	11/11/96	8.00	Prim	<10
05GP046	11/11/96	12.00	Prim	<10
05GP046	11/11/96	15.00	Prim	<10
05GP047	11/11/96	4.00	Prim	83
05GP047	11/11/96	12.00	Prim	<10
05GP047	11/11/96	15.00	Prim	<10
05GP048	11/11/96	4.00	Prim	1100 PI
05GP048	11/11/96	8.00	Prim	730 PI
05GP048	11/11/96	14.00	Prim	4300 PI
05GP049	11/12/96	4.00	Prim	1030 PI
05GP049	11/12/96	8.00	Prim	<10
05GP049	11/12/96	15.00	Prim	<10
05GP050	11/12/96	4.00	Prim	210 PI
05GP050	11/12/96	8.00	Prim	79 PI
05GP050	11/12/96	16.00	Prim	11
05GP051	11/12/96	4.00	Prim	67 PI
05GP051	11/12/96	8.00	Prim	<10
05GP051	11/12/96	15.00	Prim	<10
05GP052	11/12/96	4.00	Prim	68
05GP052	11/12/96	8.00	Prim	<10
05GP052	11/12/96	8.00	Dup 1	<10
05GP052	11/12/96	12.00	Prim	<10
05GP053	11/12/96	4.00	Prim	76 PI
05GP053	11/12/96	12.00	Prim	<10
05GP053	11/12/96	16.00	Prim	<10
05GP062	11/15/96	4.00	Prim	<10
05GP062	11/15/96	8.00	Prim	<10
05GP062	11/15/96	16.00	Prim	<10
05GP063	11/15/96	4.00	Prim	<10
05GP063	11/15/96	8.00	Prim	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 6/16 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
1996 VRP Tier II Non-Residential				6000
05GP063	11/15/96	16.00	Prim	<10
05GP064	11/16/96	4.00	Prim	<10
05GP064	11/16/96	12.00	Prim	<10
05GP064	11/16/96	16.00	Prim	<10
05GP064	11/16/96	16.00	Dup. 1	<10
06GP007	12/16/96	4.00	Prim	<10
06GP007	12/16/96	8.00	Prim	<10
06GP007	12/16/96	14.00	Prim	38
06GP008	12/16/96	4.00	Prim	<10
06GP008	12/16/96	8.00	Prim	<10
07GP005	11/14/96	8.00	Prim	<10
07GP005	11/14/96	12.00	Prim	<10
07GP005	11/14/96	15.00	Prim	<10
07GP008	11/17/96	4.00	Prim	<10
07GP008	11/17/96	12.00	Prim	<10
07GP008	11/17/96	19.00	Prim	3300 PI
17GP001	11/12/96	4.00	Prim	<10
17GP001	11/12/96	12.00	Prim	<10
17GP001	11/12/96	18.00	Prim	(8100) PI
17GP003	12/16/96	4.00	Prim	65
17GP003	12/16/96	8.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level The following qualifier(s) exist: P, I, J

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils

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AlliedSignal Industrial Complex

**South Bend, Indiana**

05GP050 05G

06GP050

CONSTITUENT (Units in mg/kg)	SITE	05GP050	05GP050	05GP050	05GP050	07GP004
	SAMPLE ID	05PS05004	05PS05008	05PS05012	05PS05016	07PS00404
	DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	4.2	3.2	3.3	3.3	16
Barium, Total	10000	56	32	46	18	33
Cadmium, Total	730.0	2.8	<1	1.8	<1	<1
Chromium, Total		82	29	16	5.9	5.6
Copper, Total	1700	38	10.4	9.6	6.2	1.6
Lead, Total	400	33	14	<6	6.2	<5
Mercury, Total	87.60	0.16	0.11	<0.1	<0.1	<0.1
Nickel, Total	10000	15	5.3	10	6.5	1.9
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	1.5	1	<1	<1	1.1
Zinc, Total	10000	34	20	19	16	<5
Sum of Concentrations		266.65	115.01	105.70	68.10	59.00

Values represent total concentrations unless noted      <=Not detected at indicated reporting limit      ---=Not analyzed

For RCL, INCORP.

Criteria Comparison, 1996 VRA-Tier II Non-Residents

### Analytical Summary - Inorganics in Soils

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Plant 6/16 - Former USTs

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## Voluntary Site Investigation

AlliedSignal Industrial Complex

## **South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	07GP004	07GP004	07GP004	07GP005	07GP006
	SAMPLE ID	07PS00406	07PS00412	07PS00416	07PS00504	07PS00604
	DATE	1996 VRP	11/14/96	11/14/96	11/14/96	11/17/96
DEPTH (ft)	Tier II	8.00	12.00	15.00	4.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.36	0.33	0.63	9.3	3.1
Barium, Total	10000	5.4	7.4	8.6	35	34
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	1.1	9.6
Copper, Total	1700	3.1	2.7	3	6.9	4.3
Lead, Total	400	<5	<5	<6	<5	<6
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	4.6	2.7	2.7	6.1	5.2
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.6	<0.5
Silver, Total	7300	<1	<1	<1	2.1	1.7
Zinc, Total	10000	12	8.6	9.3	17	13
Sum of Concentrations		25.46	21.63	24.13	86.40	70.80

## Analytical Summary - Inorganics in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units: in mg/kg)	SITE	07GP008	07GP008	07GP008	07GP008	09GP001	
	SAMPLE ID	07PS00808	07PS00812	07PS00819	07OD00819	09PS00104	
	DATE	1996 VRP	11/17/96	11/17/96	11/17/96	11/17/96	
DEPTH (ft)	Tier II	8.00	12.00	19.00	19.00	4.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary	
Arsenic, Total		438	2.6	0.5	2.9 J	1.3	1.5
Barium, Total		10000	19	6.1	32 J	10	12
Cadmium, Total		730.0	<1	<1	<1	<1	<1
Chromium, Total			5.4	<5	8.9 J	<5	<5
Copper, Total		1700	4.6	3.5	4.4	6.2	4
Lead, Total		400	<5	<5	<5	<5	<5
Mercury, Total		87.80	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	4.6	2.6	4.5	4.6	4.1
Selenium, Total		7300	<0.6?	<0.6	<0.6	<0.6	<0.6
Silver, Total		7300	1.17	<1	1.8	<1	<1
Zinc, Total		10000	147	9.3	11	16	13
Sum of Concentrations		50,90		22.00	64.70	37.10	34.60

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

? = Duplicate or no data found, Data review required.

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential



## Analytical Summary - Inorganics in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units: mg/kg)	SITE	08GP002	17GP001	17GP001	17GP001	17GP001
	SAMPLE ID	09PS0021B	17PS00104	17PS00108	17PS00112	17PS00118
	DATE	1996.VRP	11/17/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II	18.00	4.00	8.00	12.00	18.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.63	1.7	4.6	0.64	0.67
Berium, Total	10000	<1	18	22	6.5	6.9
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total	7300	<6	7	<6	<6	<6
Copper, Total	1700	3.6	4.6	4.8	2.8	3
Lead, Total	400	<5	6.1	<5	<6	6.4
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	2.8	4.8	8.7	3.4	2.6
Selenium, Total	7300	<0.6	<0.6	<0.6	<0.6	<0.6
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	9	12	12	9.2	8.1
Sum of Concentrations		23.13	61.10	60.10	22.64	28.67

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Soils

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## **Voluntary Site Investigation**

## AlliedSignal Industrial Complex

## **South Bend, Indiana**

**17GP002**

	SITE	17GP002	17GP002	17GP002	17GP003	17GP003
	SAMPLE ID	17PS00204	17PS00208	17PS00212	17PS00304	17PS00308
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	12/13/96	12/13/96	12/13/96	12/16/96
	DEPTH (ft)	Tier II	4.00	6.00	12.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.89	0.99	0.47	8.5
Barium, Total		10000	4.9	5	6.1	89
Cadmium, Total		730.0	<1	<1	<1	3
Chromium, Total			<5	<5	<5	8.7
Copper, Total		1700	3.1	2.9	2.8	28
Lead, Total		400	<5	<5	<5	60
Mercury, Total		87.60	<0.1	<0.1	<0.1	2.2
Nickel, Total		10000	4.5	4.6	3.5	9.2
Selenium, Total		7300	<0.5	<0.5	<0.5	0.75
Silver, Total		7300	<1	<1	<1	23
Zinc, Total		10000	12	13	11	124
Sum of Concentrations			25.39	26.49	23.87	325.35
						29.70

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

## ~~Criteria Comparison 1990 VRP Tier II Non-Residential~~

## Analytical Summary - Inorganics in Soils

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Plant 6/16 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	17GP003
		SAMPLE ID	17PS00314
DATE	1996 VRP	12/16/96	
DEPTH (ft)	Tier II	14.00	
RESULT TYPE	Non-Residential	Primary	
Arsenic, Total	438	0.60	
Barium, Total	10000	4.6	
Cadmium, Total	730.0	<1	
Chromium, Total		<5	
Copper, Total	1700	1.8	
Lead, Total	400	<6	
Mercury, Total	87.80	<0.1	
Nickel, Total	10000	2.8	
Selenium, Total	7300	<0.5?	
Silver, Total	7300	<17	
Zinc, Total	10000	7.0?	
Sum of Concentrations		16.70	

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit --- = Not analyzed

? = Duplicate records found, Data review required. The following qualifier(s) exist: J

RCL INORG

Criteria Comparison: 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Plant 6/16 - Former USTs  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE	01CPT008	01CPT008	01CPT016	01CPT016	01CPT016	
	SAMPLE ID	1996 VRP	01CPW00844	01CQD00844	01CPW01631	01CPW01843	01CPW01655
	DATE	Tier II	12/05/96	12/05/96	07/26/97	07/26/97	07/26/97
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary	Primary
Vinyl chloride		10	<10	<2	<1	4.2	[140]
Benzene		98.6	<5	<5	42	46	<300
Ethylbenzene		10220	<5	<5	1.7	<1	<100
Toluene		20440	<5	<5	<1	<1	<100
Xylenes (total)		204400	<10	<5	<3	<3	<300
Isopropylbenzene		1.02E+4	<1	<5	...	...	...
Naphthalene		4088	<5	<5	...	...	...
1,2,4-Trimethylbenzene		5.11E+3	<1	<400	...	...	...
1,3,5-Trimethylbenzene		5.11E+3	<1	<5	...	...	...
1,1-Dichloroethene		10220	<5	<5	<1	6.2	<100
1,2-Dichloroethane		31.4	<5	<5	<1	6.0	[6300]
cis-1,2-Dichloroethane		1022	760	590	...	...	...
trans-1,2-Dichloroethane		2040	190	150	...	...	...
1,2-Dichloroethene (Total)		...	...	...	6.0	36	240
1,2-Dichloropropane		4.21E+1	<5	<5	<1	<1	[160]
1,1,1-Trichloroethane		9198	<5	<5	<1	<1	<100
Tetrachloroethene		56.1	<5	<5	2.0	<1	<100
Trichloroethene		260	<5	<5	1.1	2.3	<100
Chloroethane		9.88E+2	<10	<10	3.7	<1	<100
<b>Sum of Concentrations</b>			960.00	740.00	56.60	100.70	6830.00
<hr/>							
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
[] = Greater than Action Level							
For RCL VOC1							
Criteria Comparison 1996 VRP Tier II Non-Residential							

## Analytical Summary - VOCs in Groundwater

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Plant 6/16 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	1996 VRP	01CPT016	02GP001	05GP048	05GP049	05GP052
DATE	Tier II		07/25/97	11/16/96	11/11/96	11/12/96	11/12/96
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	{110}	<2	<2000	<500	<20
Benzene		88.6	<100	8.9	<5000	<1300	84 J
Ethylbenzene		10220	<100	9.6	<5000	1600 J	<50 UJ
Toluene		20440	<100	<5	<5000	<1300	100 J
Xylene (total)		204400	<300	<5	<5000	7400 J	81 J
Isopropylbenzene		1.02E+4	---	14	<5000	<1300	86 J
Naphthalene		4088	--	<5	<5000	1700 J	<50
1,2,4-Trimethylbenzene		5.11E+3	---	11	<5000	<1300	340 J
1,3,5-Trimethylbenzene		5.11E+3	---	<5	<5000	<1300	<50
1,1-Dichloroethane		10220	<100	<5	<5000	<1300	<50
1,2-Dichloroethane		31.4	{6300}	<5	<5000	<1300	<50
cis-1,2-Dichloroethane		1022	---	<5	{88000}	<1300	<50
trans-1,2-Dichloroethene		2040	---	<5	<5000	<1300	<50
1,2-Dichloroethene (Total)			230	---	---	---	---
1,2-Dichloropropane		4.21E+1	{160}	---	---	---	---
1,1,1-Trichloroethane		9198	<100	<5	<5000	<1300	<50
Tetrachloroethene		56.1	<100	<5	<5000	<1300	<50
Trichloroethene		280	<100	<5	{13000}	<1300	<50 UJ
Chloroethane		9.88E+2	<100	---	---	---	---
<b>Sum of Concentrations</b>			<b>6800.00</b>	<b>43.40</b>	<b>10100.00</b>	<b>10800.00</b>	<b>875.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

II = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Groundwater

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Plant 6/16 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	1996 VRP DATE	05GP063 Tier II	07GP005 11/15/96	07PW06320 11/14/96	09GP002 11/17/96	09GP004 07/16/97	09GP005 07/16/97
	RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	<200	8.2	<200	[850]	[47]	
Benzene		98.6	[1600]	37	[6500]	<500	[930]	
Ethylbenzene		10220	2900	<5	<600	<500	<50	
Toluene		20440	2400	<5	<500	<500	<50	
Xylene (total)		204400	8700	<5	<500	<500	<50	
Isopropylbenzene		1.02E+4	<500	<5	<500	<500	<50	
Naphthalene		4088	<500	<5	<500	<500	<50	
1,2,4-Trimethylbenzene		5.11E+3	1500	<5	<500	<500	<50	
1,3,5-Trimethylbenzene		5.11E+3	<500	<5	<500	<500	<50	
1,1-Dichloroethene		10220	<500	6.4	<500	<500	<50	
1,2-Dichloroethane		31.4	<500	<5	<500	<500	<50	
cis-1,2-Dichloroethene		1022	<500	43	<500	[4200]	<50	
trans-1,2-Dichloroethene		2040	<500	<5	<500	<500	<50	
1,2-Dichloroethene (Total)			...	...	...	...	...	
1,2-Dichloropropane		4.21E+1	...	...	<500	<500	<50	
1,1,1-Trichloroethane		9198	<500	<5	<500	<500	<50	
Tetrachloroethene		56.1	<500	<5	<500	<500	<50	
Trichloroethene		260	<500	67	<500	[6100]	<50	
Chloroethene		9.86E+2	...	...	<1000	<1000	<100	
Sum of Concentrations:			17100.00	161.60	6500.00	11150.00	877.00	
<hr/>								
<hr/>								
Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed								
[] = Greater than Action Level								
For RCL VOC1								
Criteria Comparison 1996 VRP Tier II Non-Residential								

## Analytical Summary - VOCs in Groundwater

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	09GP006	09GP007	09GP008	17GP001	MW-6
	SAMPLE ID	1996 VRP	09PW00620	09PW00720	09PW00820	17PW00120
	DATE	Tier II	07/17/97	07/17/97	07/18/97	11/12/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<2	[410]	<1000	<200 JHT
Benzene	98.6	<26	<5	[670]	[15000] J	[19800] JHT
Ethylbenzene	10220	<26	<5	540	2100 J	2000 JHT
Toluene	20440	<26	<5	200	11000 J	17000 JHT
Xylene (total)	204400	<26	<5	630	6500 J	7800 JHT
Isopropylbenzene	1.02E+4	<26	<5	280	<100	<500 JHT
Naphthalene	4088	<26	<5	80	<600	<600 JHT
1,2,4-Trimethylbenzene	6.11E+3	<26	<5	140	560 J	1600 JHT
1,3,5-Trimethylbenzene	6.11E+3	<26	<5	65	<100	<500 JHT
1,1-Dichloroethane	10220	40	<5	60	2000 J	2200 JHT
1,2-Dichloroethane	31.4	<26	<5	<50	<600	<500 JHT
cis-1,2-Dichloroethane	1022	57	<5	370	[15500] J	[120000] JHT
trans-1,2-Dichloroethane	2040	<26	<5	<50	<600	<500 JHT
1,2-Dichloroethane (Total)						
1,2-Dichloropropane	4.21E+1	<26	<5	<50	<600	<500 JHT
1,1,1-Trichloroethane	9198	<26	18	<50	<600	<600 JHT
Tetrachloroethene	56.1	<26	<5	<50	<500	<500 JHT
Trichloroethene	260	[340]	120	[300]	<500	[19000] JHT
Chloroethane	9.86E+2	<50	<10	<100	<1000	<1000 JHT
Sum of Concentrations		437.00	138.00	3885.00	42660.00	178400.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

J = Greater than Action Level The following qualifier(s) exist: J, U, H, T

For RCL

Media Comparison: [REDACTED] VRP: [REDACTED] Non-Residential: [REDACTED]

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

## AlliedSignal Industrial Complex South Bend, Indiana

**South Bend, Indiana**

**South Bend, Indiana**

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	05GP036	06GP036	05GP037	05GP037	06GP037
		SAMPLE ID	06PS03612	06PS03616	05PS03704	05PS03708	06PS03716
DATE	1996 VRP		10/17/96	10/17/96	10/17/96	10/17/96	10/17/96
DEPTH (ft)	Tier II		12.00	16.00	4.00	8.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<3.2	<2.8
Xylene (total)		1000	<0.25	<0.25	<0.25	24	12
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<3.2	<2.8
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<3.2	<2.8
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	30	17
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	31	24
Naphthalene		10000	<0.25	<0.25	<0.25	<3.2	<2.8
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<6.4	<6.3
Sum of Concentrations		0.00	0.00	0.00	86.00	63.00	

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

F RCL No [REDACTED] Maria C [REDACTED] VRR [REDACTED] UI No [REDACTED] [REDACTED]

## Analytical Summary - VOCs In Soils

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**Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

South Bend, Indiana							
CONSTITUENT (Units in mg/kg)	SITE	05GP038	05GP038	05GP038	05GP039	05GP039	05GP039
	SAMPLE ID	05PS03804	05PS03808	05PS03816	05PS03904	05PS03912	
	DATE	1996 VRP	10/17/96	10/17/96	10/17/96	10/17/96	10/17/96
DEPTH (ft)	Tier II	4.00	8.00	16.00	4.00	12.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25	<0.05
Xylene (total)		1000	<0.25	<0.25	<0.25	<0.25	<0.1
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.01
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.01
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.01
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.01
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25	<0.05#
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP039	05GP040	05GP040	05GP040	05GP040
	SAMPLE ID	05PS03916	05PS04004	05PS04008	05PS04012	05PS04016
	DATE	1996 VRP	10/17/96	10/17/96	10/17/96	10/17/96
	DEPTH (ft)	Tier II	16.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.06	<0.26	<0.26
Xylenes (total)	1000	<0.25	<0.25	<0.1	<0.26	<0.26
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.01	<0.26	<0.26
n-Propylbenzene	1.00E+03	<0.25	<0.26	<0.01	<0.26	<0.26
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.01	<0.26	<0.26
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.26	<0.01	<0.26	<0.26
Naphthalene	10000	<0.25	<0.25	<0.06#	<0.26	<0.26
2-Methylnaphthalene	10000	<0.5	<0.5	<0.1	<0.5	<0.5
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit --- =Not analyzed

# = Constituent run more than one test method, highest result reported.

RCL [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] Maria C. [REDACTED] 3 VR [REDACTED] II No [REDACTED] [REDACTED] [REDACTED]

## Analytical Summary - VOCs in Soils

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## **Voluntary Site Investigation**

AlliedSignal Industrial Comple

## **South Bend, Indiana**

**South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	05GP041	05GP041	05GP041	05GP042	05GP043
	SAMPLE ID	05PS04104	05PS04112	05PS04116	05PS04210	05PS04308
	DATE	1996 VRP	10/17/96	10/17/96	10/17/96	10/18/96
DEPTH (ft)	Tier II	4.00	12.00	16.00	10.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.05	<0.25
Xylyne (total)	1000	<0.25	<0.25	<0.25	<0.1	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.01	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.01	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.01	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.25	<0.25	<0.01	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.05#	<0.25
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.1	<0.5
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP043	05GP043	05GP043	05GP059	05GP059
	SAMPLE ID	05PS04312	05QD04312	05PS04316	05PS05904	05PS05908
	DATE	1996 VRP	10/18/96	10/18/96	10/18/96	11/14/96
	DEPTH (ft)	Tier II	12.00	12.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Duplicate, 1	Primary	Primary	Primary
Toluene	1000	<0.25	<0.55	<1.3	<0.25	<0.05
Xylene (total)	1000	0.69 J	2.5	3.5	<0.25	<0.1
Isopropylbenzene	1.0E +03	<0.25	<0.55	2	<0.25	<0.01
n-Propylbenzene	1.00E +03	<0.25	<0.55	<1.3	<0.25	<0.01
1,3,5-Trimethylbenzene	1.00E +03	<0.25	2.6	<1.3	<0.25	<0.01
1,2,4-Trimethylbenzene	1.00E +3	1.4 J	8.6	13	<0.25	<0.01
Naphthalene	10000	0.63 J	2.1	<1.3	<0.25	<0.05#
2-Methylnaphthalene	10000	1.1 J	2.5	<2.6	<0.6	<0.1
Sum of Concentrations		3.82	18.20	18.50	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

Criteria Comparison - 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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**Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

	SITE	05GP059	05GP059	05GP059	05GP060	05GP060
	SAMPLE ID	05QD05908	05PS05912	05PS05915	05PS06004	05PS06008
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/14/96	11/14/96	11/14/96	11/14/96
	DEPTH (ft)	Tier II	8.00	12.00	15.00	4.00
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary
Toluene		1000	<0.05	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.01	0.99	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.25	<0.25
Naphthalene		10000	<0.05	0.3	<0.25	<0.25
2-Methylnaphthalene		10000	<0.1	<0.5	<0.5	<0.5
Sum of Concentrations		0.00	1.29	0.00	0.00	0.00

Values represent total concentrations unless noted      <=Not detected at indicated reporting limit      --- Not analyzed

For RCL VAC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT	SITE	05GP060	05GP060	05GP060	05GP066	05GP066
	SAMPLE ID	05PS06012	05PS06018	05QD06018	05PS06604	05PS06612
CONSTITUENT (Units in mg/kg)	DATE	1995 VRP	11/14/96	11/14/96	11/14/96	12/17/96
	DEPTH (ft)	Tier II	12.00	15.00	15.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
						Primary
Toluene		1000	< 0.05	< 0.25	< 0.25	< 0.25
Xylene (total)		1000	< 0.1	< 0.25	< 0.25	< 0.25
Isopropylbenzene		1.0E + 03	< 0.01	< 0.25	< 0.25	< 0.25
n-Propylbenzene		1.00E + 03	< 0.01	< 0.25	< 0.25	< 0.25
1,3,5-Trimethylbenzene		1.00E + 03	< 0.01	< 0.25	< 0.25	< 0.25
1,2,4-Trimethylbenzene		1.00E + 3	< 0.01	< 0.25	< 0.25	< 0.25
Naphthalene		10000	< 0.05#	< 0.25	< 0.25	< 0.25
2-Methylnaphthalene		10000	< 0.1	< 0.5	< 0.5	< 0.5
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

RCRA Corrective Action Program 1995 VRP II Non-Residential

Analytical Summary - VOCs in Soils

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South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	05GP066	05GP067	05GP067	05GP067	05GP067
	SAMPLE ID	05PS06616	05PS06704	05PS06712	05AD06712	05PS06716
	DATE	1996 VRP	12/17/96	12/17/96	12/17/96	12/17/96
DEPTH (IN)	Tier II	16.00	4.00	12.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

## Analytical Summary - VOCs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP068	05GP068	05GP068	05GP069	05GP069
	SAMPLE ID	05PS06804	05PS06808		05PS06904	05PS06908
	DATE	1996 VRP	12/17/96	12/17/96	12/18/96	12/13/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Xylene (total)	1000	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Isopropylbenzene	1.0E + 03	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
n-Propylbenzene	1.00E + 03	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
1,3,5-Trimethylbenzene	1.00E + 03	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
2,4,4-Trimethylbenzene	1.00E + 3	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Naphthalene	10000	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
2-Methylnaphthalene	10000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison - 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

**AlliedSignal Industrial Complex**  
**Smith, Smith & Associates**

South Bend, Indiana

## **South Bend, Indiana**

## **South Bend, Indiana**

**05GP069**      **05HA**

05PS06914

CONSTITUENT (Units in mg/kg)	SITE	05GP069	05HA044	05HA045	10GP001	10GP001
	SAMPLE ID	05PS06914	05HA04407	05HA04507	10PS00104	10PS00108
	DATE	1996 VRP	12/13/96	11/05/96	11/06/96	11/14/96
DEPTH (ft)	Tier II	14.00	7.00	7.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.26	<0.26	<0.26	<0.26	<0.06
Xylene (total)	1000	<0.26	<0.26	<0.26	<0.26	<0.1
Isopropylbenzene	1.0E+03	<0.26	<0.26	<0.26	<0.26	<0.01
n-Propylbenzene	1.00E+03	<0.26	<0.26	<0.26	<0.26	<0.01
1,3,5-Trimethylbenzene	1.00E+03	<0.26	<0.26	<0.26	<0.26	<0.01
1,2,4-Trimethylbenzene	1.00E+03	<0.26	<0.26	<0.26	<0.26	<0.01
Naphthalene	10000	<0.26	<0.26	<0.26	<0.25	<0.05#
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.1
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RO

## Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Voluntary Site-Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	10GP001	10GP001	10GP002	10GP002	10GP002
	SAMPLE ID	10PS00112	10PS00117	10PS00204	10PS00208	
	DATE	1996 VRP	11/14/96	11/14/96	11/15/96	11/15/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
Xylene (Total)	1000	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
Isopropylbenzene	1.0E+03	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
n-Propylbenzene	1.00E+03	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
1,3,5-Trimethylbenzene	1.00E+03	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
1,2,4-Trimethylbenzene	1.00E+3	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
Naphthalene	10000	< 0.26	< 0.26	< 0.26	< 0.26	< 0.33#
2-Methylnaphthalene	10000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.33#
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit ... = Not analyzed

# = Constituent found in more than one test method, highest result reported.

RCL 1996

Maria C. Corrison, 1996 VRP, II Nonsider

## Analytical Summary - VOCs in Soils

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**Plant 14 - Former USTs**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

## South Bend, Indiana

South Bend, Indiana			
CONSTITUENT	SITE	SAMPLE ID	10GP002
	DATE	1996 VRP	11/15/96
	DEPTH (ft)	Tier II	16.00
	RESULT TYPE	Non-Residential	Primary
Toluene	1000	<0.25	
Xylene (total)	1000	<0.25	
Isopropylbenzene	1.0E + 03	<0.25	
n-Propylbenzene	1.00E + 03	<0.25	
1,3,5-Trimethylbenzene	1.00E + 03	<0.25	
1,2,4-Trimethylbenzene	1.00E + 03	<0.25	
Naphthalene	10000	<0.25	
2-Methylnaphthalene	10000	<0.5	
Sum of Concentrations	0.00		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit -- = Not analyzed

The following qualifier(s) exist: J, U

For RCL VOC

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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Plant 14 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP035	05GP035	05GP035	05GP035	05GP038
SAMPLE ID	05PS03504	05PS03512	05QD03512	05PS03516	05PS03608
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/17/96	10/17/96	10/17/96
DEPTH (ft)	Tier II	4.00	12.00	12.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
Fluoranthene	10000	---	---	---	---
Naphthalene	10000	<0.56	<0.26	<0.25	<1.3
Pyrene	10000	---	---	---	---
Sum of Concentrations:		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit --- =Not analyzed

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP036	05GP036	05GP037	05GP037	05GP037
SAMPLE ID	05PS03612	05PS03616	05PS03704	05PS03708	05PS03715
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/17/96	10/17/96	10/17/96
DEPTH (ft)	RESULT TYPE	Tier II	12.00	16.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Fluoranthene		10000	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25
Pyrene		10000	---	---	---
Sum of Concentrations:			0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL PNA			Criteria Comparison 1998 VRP Tier II Non-Residential		

## Analytical Summary - PNAs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

	SITE	05GP038	05GP038	05GP038	05GP039	05GP039
CONSTITUENT (Units in mg/kg)	SAMPLE ID	05PS03804	05PS03808	05PS03816	05PS03904	05PS03912
DATE	1996 VRP	10/17/96	10/17/96	10/17/96	10/17/96	10/17/96
DEPTH (ft)	Tier II	4.00	8.00	16.00	4.00	12.00
RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Fluoranthene		10000	---	---	---	0.67
Naphthalene		10000	<0.25	<0.25	<0.25	<0.05#
Pyrene		10000	---	---	---	0.59
Sum of Concentrations		0.00	0.00	0.00	0.00	1.26

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit ---=Not analyzed

# = Constituent found in more than one test method; highest result reported.

For RCL DNA

Criteria Comparison: 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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## **Voluntary Site Investigation**

AlliedSignal Industrial Comple

## South Bend, Indiana

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP039	05GP040	05GP040	05GP040	05GP040
	SAMPLE ID	05PS03916	05PS04004	05PS04008	05PS04012	05PS04016
	DATE	1996 VRP	10/17/96	10/17/96	10/17/96	10/17/96
DEPTH (ft)	Tier II	16.00	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Fluoranthene	10000	---	---	<0.33	---	---
Naphthalene	10000	<0.25	<0.25	<0.05#	<0.25	<0.25
Pyrene	10000	---	---	<0.33	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

**Values represent total concentrations unless noted**      < = Not detected at indicated reporting limit      --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - PNAs in Soils  
Plant 14 - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	06GP041	05GP041	05GP041	06GP042	05GP043
	SAMPLE ID	05PS04104	05PS04112	05PS04116	05PS04210	05PS04308
	DATE	1996 VRP	10/17/96	10/17/96	10/17/96	10/18/96
	DEPTH (ft)	Tier II	4.00	12.00	16.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Fluoranthene	10000	---	---	---	< 0.33	---
Naphthalene	10000	< 0.25	< 0.25	< 0.25	< 0.05#	< 0.25
Pyrene	10000	---	---	---	< 0.33	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

## Analytical Summary - PNAs in Soils

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Plant 14 - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex

**South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	05GP043	05GP043	05GP043	05GP059	05GP059
	SAMPLE ID	05PS04312	05QD04312	05PS04316	05PS05904	05PS05908
	DATE	1996 VRP	10/18/96	10/18/96	10/18/96	11/14/96
	DEPTH (ft)	Tier II	12.00	12.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Fluoranthene	10000	---	---	---	---	<0.33
Naphthalene	10000	0.63 J	2.1	<1.3	<0.25	<0.05#
Pyrene	10000	---	---	---	---	<0.33
Sum of Concentrations		0.63	2.10	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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## Plant 14 - Former USTs

### Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

**South Bend, Indiana**

CONSTITUENT <small>(Units in mg/kg)</small>	SITE	05GP059	05GP059	05GP059	05GP060	05GP060
	SAMPLE ID	05QD05908	05PS05912	05PS05915	05PS06004	05PS06008
	DATE	1996 VRP	11/14/96	11/14/96	11/14/96	11/14/96
DEPTH (ft)	Tier II	8.00	12.00	15.00	4.00	8.00
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Fluoranthene	10000	---	---	---	---	---
Naphthalene	10000	<0.05	0.3	<0.25	<0.25	<0.25
Pyrene	10000	---	---	---	---	---
Sum of Concentrations		0.00	0.30	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

### Analytical Summary - PNAs in Soils

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## **Voluntary Site Investigation**

AlliedSignal Industrial Comple

## South Bend, Indiana

05GP060

	SITE	05GP060	05GPO60	05GP060	05GP066	05GP066
	SAMPLE ID	05PS06012	05PS06018	05QD06018	06PS06604	06PS06612
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/14/96	11/14/96	11/14/96	12/17/96
	DEPTH (ft)	Tier II	12.00	15.00	15.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
						Primary
Fluoranthene		10000	<0.33	---	---	---
Naphthalene		10000	<0.06#	<0.26	<0.26	<0.26
Pyrene		10000	<0.33	---	---	---
<b>Sum of Concentrations:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP066	05GP067	05GP067	05GP067	05GP067
	SAMPLE ID	05PS06610	05PS06704	05PS06712	05GD06712	05PG06716
	DATE	1996 VRP	12/17/96	12/17/96	12/17/96	12/17/96
	DEPTH (ft)	Tier II	16.00	4.00	12.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Fluoranthene	10000	---	---	---	---	---
Naphthalene	10000	<0.26	<0.26	<0.26	<0.26	<0.26
Pyrene	10000	---	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - PNAs in Soils

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Plant 14 - Former USTs

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## Voluntary Site Investigation

AlliedSignal Industrial Complex

**South Bend, Indiana**

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	05GP089	05HA044	05HA045	10GP001	10GP001		
SAMPLE ID	05PS06914	05HA04407	05HA04607	10PS00104	10PS00108		
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	12/13/96	11/05/96	11/06/96	11/14/96	11/14/96
DEPTH (ft)	Tier II	14.00	7.00	7.00	4.00	8.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Fluoranthene		10000	---	---	---	---	<0.33
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25	<0.064
Pyrene		10000	---	---	---	---	<0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
# = Constituent in more than one test method, highest result reported.							
For RCL PNA							
Criteria Comparison 1996 VRP Tier II Non-Residential							

## Analytical Summary - PNAs in Soils

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## Voluntary Site Investigation

AlliedSignal Industrial Comple

**South Bend, Indiana**

10GP001 10

10PS00112

South Bend, Indiana

South Bend, Indiana						
	SITE	10GP001	10GP001	10GP002	10GP002	10GP002
	SAMPLE ID	10PS00112	10PS00117	10PS00204	10PS00208	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/14/96	11/14/96	11/15/96	11/15/96
	DEPTH (ft)	Tier II	12.00	17.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Fluorene		10000	---	---	---	<0.33
Naphthalene		10000	<0.25	<0.25	<0.25	<0.33#
Pyrene		10000	---	---	---	<0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

Criteria Comparison 1996 VBP Tier II Non-Residential

**Analytical Summary - PNAs in Soils**  
**Plant 14 - Former USTs**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana			
CONSTITUENT	(Units in mg/kg)	SITE	10GP002
		SAMPLE ID	10PS00216
DATE	1996 VRP	11/15/96	
DEPTH (ft)	Tier II	16.00	
RESULT TYPE	Non-Residential	Primary	
Fluoranthene	10000	---	
Naphthalene	10000	<0.25	
Pyrene	10000	---	
Sum of Concentrations:		0.00	

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

The following Qualifier(s) exist: J

RCL 2019 Maria C. Vitoriori - B VR - Il Notaio

## Analytical Summary - Inorganics in Soils

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**Plant 14 - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

SOUTH BEND, Indiana

CONSTITUENT	(Units in mg/kg)	SITE	05HA044
		SAMPLE ID	05HA04407
		DATE	1996 VRP
		DEPTH (ft)	Tier II
			7.00
		RESULT TYPE	Non-Residential Primary

Arsenic, Total	438	0.97
Barium, Total	10000	4.9
Copper, Total	1700	4.1
Nickel, Total	10000	3.1
Zinc, Total	10000	13
<b>Sum of Concentrations</b>		<b>26.07</b>

Values represent total concentrations unless noted    <=Not detected at indicated reporting limit    ---=Not analyzed

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - TPH/DROs in Soils

Plant 14 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
05GP035	10/17/96	4.00	Prim	720 PI
05GP035	10/17/96	12.00	Prim	230 PI
05GP035	10/17/96	12.00	Dup 1	270
05GP035	10/17/96	16.00	Prim	670 PI
05GP036	10/17/96	8.00	Prim	39
05GP036	10/17/96	12.00	Prim	<10
05GP036	10/17/96	16.00	Prim	12
05GP037	10/17/96	4.00	Prim	33
05GP037	10/17/96	8.00	Prim	2800 PI
05GP037	10/17/96	15.00	Prim	1010
05GP038	10/17/96	4.00	Prim	61
05GP038	10/17/96	8.00	Prim	21
05GP038	10/17/96	16.00	Prim	<10
05GP039	10/17/96	4.00	Prim	<10
05GP039	10/17/96	16.00	Prim	12
05GP040	10/17/96	4.00	Prim	140 PI
05GP040	10/17/96	12.00	Prim	17
05GP040	10/17/96	16.00	Prim	11
05GP041	10/17/96	4.00	Prim	10
05GP041	10/17/96	12.00	Prim	<10
05GP041	10/17/96	16.00	Prim	14
05GP042	10/18/96	4.00	Prim	22
05GP042	10/18/96	8.00	Prim	<10
05GP042	10/18/96	16.00	Prim	16
05GP043	10/18/96	8.00	Prim	<10
05GP043	10/18/96	12.00	Prim	2300 JPI
05GP043	10/18/96	12.00	Dup 1	840
05GP043	10/18/96	16.00	Prim	2400 PI
05GP059	11/14/96	4.00	Prim	10
05GP059	11/14/96	12.00	Prim	160 PI
05GP059	11/14/96	15.00	Prim	<10
05GP060	11/14/96	4.00	Prim	70
05GP060	11/14/96	8.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 14 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
05GP060	11/14/96	15.00	Prim	<10
05GP066	12/17/96	4.00	Prim	<10
05GP066	12/17/96	12.00	Prim	<10
05GP066	12/17/96	16.00	Prim	<10
05GP066	12/17/96	16.00	Dup. 1	<10
05GP069	12/13/96	4.00	Prim	11
05GP069	12/13/96	8.00	Prim	<10
05GP069	12/13/96	14.00	Prim	<10
10GP001	11/14/96	4.00	Prim	16
10GP001	11/14/96	12.00	Prim	<10
10GP001	11/14/96	17.00	Prim	<10
10GP002	11/15/96	4.00	Prim	<10
10GP002	11/15/96	8.00	Prim	<10
10GP002	11/15/96	16.00	Prim	<10

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

The following qualifier(s) exist: P, I, J

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater**  
**Plant 14 - Former USTs**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	06GP060	05GP069	10GP001
	SAMPLE ID	1996 VRP	05PW08021	05PW06920
	DATE	Tier II	11/14/96	12/13/96
	RESULT TYPE	Non-Residential	Primary	Primary
Vinyl chloride		10	<10	3.4
Benzene		68.6	<6	9.7
1,1-Dichloroethane		10220	<6	7.0
cis-1,2-Dichloroethene		1022	<6	6.2
Trichloroethene		260	<6	<6
<b>Sum of Concentrations:</b>		<b>0.00</b>	<b>29.30</b>	<b>91.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    ... = Not analyzed

## Analytical Summary - VOCs in Soils

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Plant 19 - Former USTs

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

**South Bend, Indiana**

SOUTH DODGE, INDIANA						
CONSTITUENT (Units in mg/kg)	SITE	05GP019	05GP019	05GP019	05GP021	05GP021
	SAMPLE ID	05PS01904	05PS01908	05PS01912	05PS02104	05PS02108
	DATE	1996 VRP	10/14/96	10/14/96	10/14/96	10/14/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene	1000	84	40	28	28	1.8
Xylene (total)	1000	< 2.8	< 5.5	< 2.7	< 2.9	< 0.25
Isopropylbenzene	1.0E+03	83	40	46	43	6
n-Propylbenzene	1.00E+03	< 2.8	< 5.5	< 2.7	< 2.8	< 0.25
1,3,5-Trimethylbenzene	1.00E+03	< 2.8	< 5.5	< 2.7	< 2.8	< 0.25
1,2,4-Trimethylbenzene	1.00E+03	5.7	6.7	4	< 2.8	< 0.25
Trichloroethene	25.73	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sum of Concentrations		172.70	86.70	78.00	68.00	7.80

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - VOCs in Soils

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## Voluntary Site Investigation

AlliedSignal Industrial Complex

**South Bend, Indiana**

SOUTH BEND, INDIANA							
	SITE	05GP021	05GP023	05GP024	05GP024	05GP024	05GP024
	SAMPLE ID	05PS02112	05PS02312	05PS02404	05PS02408	05PS02412	
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	10/14/96	10/15/96	10/15/96	10/15/96
	DEPTH (ft)	Tier II	12.00	12.00	4.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethylbenzene		1000	17	<0.13 E	<0.25	<0.25	<0.25
Xylene /total		1000	<2.7	<0.13 E	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	26	<0.13 E	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<2.7	<0.13 E	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<2.7	<0.13 E	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	2.9	<0.13 E	<0.25	<0.25	<0.25
Trichloroethene		26.73	<0.1	<0.13 E	<0.1	<0.1	0.39
Sum of Concentrations			45.90	0.00	0.00	0.00	0.39

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison - 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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Plant 19 - Former USTs

## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP025	05GP026	05GP025	05GP026	05GP026
	SAMPLE ID	05PS02504	05PS02508	05PS02614	05PS02608	05PS02612
	DATE	1996 VRP	10/15/96	10/15/96	10/15/96	10/15/96
DEPTH (ft)	Tier II	4.00	8.00	14.00	8.00	14.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	0.37
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	0.37	<0.25	0.76
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	0.89	<0.25	0.97
Trichloroethane	26.73	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	1.06	0.00	2.10



## Analytical Summary - VOCs in Soils

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Plant 19 - Former USTs

## Voluntary Site Investigation

AlliedSignal Industrial Complex

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP055	05GP055	05GP055	05GP056	05GP056
	SAMPLE ID	05PS05504	05PS05508	05PS05512	05PS05604	05PS05608
	DATE	1996 VRP	11/13/96	11/13/96	11/13/96	11/13/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene		1000	<0.05	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.25	<0.25
Trichloroethene		26.73	<0.05	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - VOCs in Soils

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#### Plant 19 - Former USTs

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

	SITE	05GP056	05GP057	06GP057	05GP057	05GP057
	SAMPLE ID	05PS05612	05PS05704	05PS05708	05QD06708	05P605712
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/13/96	11/13/96	11/13/96
	DEPTH (ft)	Tier II	12.00	4.00	8.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
						Primary

Ethyl benzene	1000	<0.26	<0.26	<0.05	<0.06	<0.26
Xylene (total)	1000	<0.26	<0.26	<0.1	<0.1	<0.26
Isopropylbenzene	1.0E+03	<0.26	<0.26	<0.01	<0.01	<0.26
n-Propylbenzene	1.00E+03	<0.26	<0.26	<0.01	<0.01	<0.26
1,3,5-Trimethylbenzene	1.00E+03	<0.26	<0.26	<0.01	<0.01	<0.26
1,2,4-Trimethylbenzene	1.00E+03	<0.26	<0.26	<0.01	<0.01	<0.26
Trichloroethylene	25.73	<0.1	<0.1	<0.05	<0.05	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted. < = Not detected at indicated reporting limit. --- = Not analyzed.

See RCL/VOC California Comparison 1996 VRP Test Non-Residential

## Analytical Summary - VOCs in Soils

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#### Plant 19 - Former USTs

## Voluntary Site Investigation

AlliedSignal Industrial Complex

## **South Bend, Indiana**

	SITE	05GP057	05GP058	05GP058	05GP060	05GP068
	SAMPLE ID	05QD05712	05P606804	05PS05808	05PS06810	05PS06812
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/13/96	11/14/96	11/14/96	11/14/96
	DEPTH (ft)	Tier II	12.00	4.00	8.00	10.00
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary
Ethyl benzene		1000	<0.25	<0.25	<0.05	<0.25
Xylene (total)		1000	<0.25	<0.25	<0.1	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.01	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.01	<0.25
1,3,5-Trimethylbenzenes		1.00E+03	<0.25	<0.25	<0.01	<0.25
1,2,4-Trimethylbenzenes		1.00E+03	<0.25	<0.25	<0.01	<0.25
Trichloroethene		25.73	<0.1	<0.1	<0.05	<0.1
Sum of Concentrations			0.00	0.00	0.00	0.00

## Analytical Summary - VOCs in Soils

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Plant 19 - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP065	05GP066	05GP065
	SAMPLE ID	05PS06504	05PS06508	
	DATE	1996 VRP	12/17/96	12/17/96
DEPTH (ft)	Tier.II	4.00	8.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary
Ethyl benzene	1000	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25
Trichloroethene	26.73	<0.1	<0.1	<0.25
Sum of Concentrations		0.00	0.00	0.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

The following classifier(s) exist: E, J

E RCL 100

Criteria Comparison: 100% VRP w/ II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 19 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
05GP019	10/14/96	4.00	Prim	190
05GP019	10/14/96	8.00	Prim	540
05GP019	10/14/96	12.00	Prim	890
05GP020	10/14/96	4.00	Prim	580
05GP020	10/14/96	8.00	Prim	220
05GP020	10/14/96	12.00	Prim	350
05GP021	10/14/96	4.00	Prim	86
05GP021	10/14/96	8.00	Prim	130
05GP021	10/14/96	12.00	Prim	820
05GP022	10/14/96	4.00	Prim	170
05GP022	10/14/96	8.00	Prim	910
05GP022	10/14/96	12.00	Prim	330
05GP023	10/15/96	4.00	Prim	<10
05GP023	10/15/96	8.00	Prim	<10
05GP023	10/15/96	14.00	Prim	650 PI
05GP024	10/15/96	4.00	Prim	13
05GP024	10/15/96	8.00	Prim	<10
05GP024	10/15/96	12.00	Prim	11
05GP025	10/15/96	4.00	Prim	99
05GP025	10/15/96	8.00	Prim	25
05GP025	10/15/96	14.00	Prim	15
05GP026	10/15/96	8.00	Prim	<10
05GP026	10/15/96	14.00	Prim	110
05GP026	10/15/96	16.00	Prim	190
05GP054	11/13/96	4.00	Prim	130 PI
05GP054	11/13/96	12.00	Prim	490 PI
05GP054	11/13/96	14.00	Prim	4040 PI
05GP055	11/13/96	8.00	Prim	12
05GP055	11/13/96	12.00	Prim	12
05GP056	11/13/96	4.00	Prim	13
05GP056	11/13/96	8.00	Prim	<10
05GP056	11/13/96	12.00	Prim	18
05GP057	11/13/96	4.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 19 - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
1996 VRPTier II Non-Residential				6000
05GP057	11/13/96	12.00	Prim	<10
05GP057	11/13/96	12.00	Dup 1	< 10
05GP058	11/14/96	4.00	Prim	<10
05GP058	11/14/96	10.00	Prim	< 10
05GP058	11/14/96	12.00	Prim	58

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Plant 19 - Former USTs**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana						
	SITE	05GP023	05GP055	05GP056	05GP055	05GP055
	SAMPLE ID	05PS02312	05PS05504	05PS05508	05PS05512	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/15/96	11/13/96	11/13/96	11/13/96
	DEPTH (ft)	Tier II	12.00	4.00	6.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	2.3	3.6	0.92	1.7
Barium, Total		10000	31	9.4	5.9	7.5
Chromium, Total			9.6	6.4	<5	<5
Copper, Total		1700	11	6.8	6.4	4.8
Lead, Total		400	5.2	<5	<5	5
Nickel, Total		10000	13	6.8	5.3	3.3
Silver, Total		7300	2	<1	<1	<1
Zinc, Total		10000	44	18	13	13
Sum of Concentrations		118.10	49.20	30.62	35.10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

## Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - VOCs in Groundwater

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Plant 19 - Former USTs

Date: 09/28/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	05GP064	05GP065	05GP067	05GP068
	SAMPLE ID	1996 VRP	05PW06421	05PW06518	05PW06620
	DATE	Tier II	11/13/96	11/13/96	12/17/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Xylene (total)	204400	< 10	< 5	< 10	78
Isopropylbenzene	1.02E+4	< 1	< 5	< 1	68
1,2,4 Trimethylbenzene	6.11E+3	19	< 5	< 1	200
(1,1)-Dichloroethane	10220	< 5	< 5	12	< 50
1,1,1-Trichloroethane	9198	< 6	< 6	30	< 60
Sum of Concentrations		19.00	0.00	42.00	346.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

RCL/V061

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils  
Transportation Area - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

South Bend, Indiana						
	SITE	03GP022	03GP022	03GP022	03GP022	03GP023
	SAMPLE ID	03PS02204	03PS02208	03PS02212	03PS02212	03PS02308
CONSTITUENT	(Units in mg/kg)	DATE	10/28/96	10/28/96	10/28/96	10/28/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
						Primary
Ethyl benzene		1000	<0.26	<0.26	<0.26	<0.26
Trichloroethane		25.73	<0.1	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.12</b>

**Analytical Summary - VOCs in Soils  
Transportation Area - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	03GP023	03GP023	03GP024	03GP024	03GP024
	SAMPLE ID	03PS02312	03PS02315	03PS02404	03PS02408	03PS02412
	DATE	1996 VRP	10/28/96	10/28/96	10/29/96	10/29/96
DEPTH (ft)	Tier II	12.00	16.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene	1000	<0.25	0.6	<0.25	<0.25	<0.05
Trichloroethene	25.73	0.13	0.89	0.12	<0.1	<0.05
Sum of Concentrations		0.13	1.49	0.12	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Ex RCL VOC

Criteria Compendium 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils

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## **Transportation Area - Former USTs**

## **Voluntary Site Investigation**

## AlliedSignal Industrial Complex

### South Bend, Indiana

	SITE	03GP025	03GP026	03GP025	03GP026	03GP028
	SAMPLE ID	03PS02504	03PS02506	03PS02512	03PS02804	03PS02810
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/29/96	10/29/96	10/29/96	10/30/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Ethyl benzene		1000	<0.25	<0.25	<0.06	<0.25
Trichloroethane		26.73	<0.1	<0.1	<0.06	<0.1
Sum of Concentrations			0.00	0.00	0.00	0.14

## Analytical Summary - VOCs in Soils

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## Transportation Area - Former USTs

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## Voluntary Site Investigation

## AlliedSignal Industrial Complex

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	03GP028	03GP029	03GP029	03GP030	03GP032
	SAMPLE ID	03PS02814	03PS02904	03PS02910	03PS03008	03PS03208
DATE	1996 VRP	10/30/96	04/22/97	04/22/97	04/22/97	04/22/97
DEPTH (ft)	Tier II	14.00	4.00	10.00	8.00	8.00
RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene	1000	<0.26	<0.06	<0.06	<0.06	<0.05
Trichloroethene	25.73	<0.1	0.48	0.18	<0.05	<0.05
Sum of Concentrations		0.00	0.48	0.18	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

RCL VOCs      Criteria Comparison      VRP      Tier II Non-Residential

## Analytical Summary - VOCs in Soils

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### **Transportation Area - Former USTs**

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	03GP032	03GP034	03GP035	03GP036	03GP036
	SAMPLE ID	03PS03214	03PS03416	03PS03508	03PS03606	03PS03614
	DATE	1996 VRP	04/22/97	04/22/97	04/23/97	04/23/97
	DEPTH (ft)	Tier II	14.00	16.00	8.00	6.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene	1000	<0.06	<0.06	<0.06	<0.06	<0.06
Trichloroethane	25.73	<0.06	<0.06	<0.06	<0.05	0.058
Sum of Concentrations		0.00	0.00	0.00	0.00	0.06

## Analytical Summary - VOCs in Soils

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Transportation Area - Former USTs

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Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE SAMPLE ID	03GP039 03PS03908	03GP039 03QD03908	03GP039 03PS03914	03GP041 03PS04108	03GP041 03PS04114
DATE	1996 VRP	04/23/97	04/23/97	04/23/97	04/26/97	04/26/97
DEPTH (ft)	Tier II:	8.00	8.00	14.00	8.00	14.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Ethyl benzene		1000	<0.05	<0.05	<0.05	<0.05
Trichloroethane		25.73	<0.05	<0.05	<0.05	0.10
Sum of Concentrations		0.00	0.00	0.00	0.00	0.10

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Transportation Area - Former USTs

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
03GP022	10/28/96	4.00	Prim	<10
03GP022	10/28/96	8.00	Prim	<10
03GP022	10/28/96	12.00	Prim	<10
03GP022	10/28/96	12.00	Dup 1	<10
03GP023	10/28/96	4.00	Prim	<10
03GP023	10/28/96	12.00	Prim	<10
03GP023	10/28/96	15.00	Prim	150 PI
03GP024	10/29/96	4.00	Prim	<10
03GP024	10/29/96	8.00	Prim	<10
03GP025	10/29/96	4.00	Prim	<10
03GP025	10/29/96	8.00	Prim	10
03GP028	10/30/96	4.00	Prim	<10
03GP028	10/30/96	10.00	Prim	<10
03GP028	10/30/96	14.00	Prim	<10

Values represent total concentrations unless noted &lt;= Not detected at indicated reporting limit — = Not analyzed

The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils  
Transportation Area - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils

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#### Transportation Area - Former USTs

## Voluntary Site Investigation

#### AlliedSignal Industrial Complex

**South Bend, Indiana**

	SITE	03GP023	03GP023	03GP024	03GP024	03GP024
	SAMPLE ID	03PS02312	03PS02315	03PS02404	03PS02408	03PS02412
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/28/96	10/28/96	10/29/96	10/29/96
	DEPTH (ft)	Tier II	12.00	15.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.27	4.6	0.97	13
Barium, Total		10000	3.7	25	31	14
Chromium, Total			<5	6.5	6.1	<5
Copper, Total		1700	3.6	10	4.6	6.4
Lead, Total		400	<5	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	0.25	0.38
Nickel, Total		10000	3.8	9.7	5	6.9
Selenium, Total		7300	<0.5	<0.5	<0.6	0.98
Silver, Total		7300	<1	1.4	<1	<1
Zinc, Total		10000	11	28	19	18
<b>Sum of Concentrations</b>		<b>22.37</b>	<b>85.10</b>	<b>66.82</b>	<b>59.64</b>	<b>27.20</b>

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

For RCL INORG

### Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils  
Transportation Area - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	DATE 1996 VRP	SITE	03GP026	03GP025	03GP026	03GP026	03GP028
		SAMPLE ID	03PS02504	03PS02506	03PS02512	03PS02804	03PS02810
		DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	1.4	2.3	9.6	0.67	0.83
Barium, Total		10000	44	113	26	56	44
Chromium, Total			6.6	<6	9.6	9.7	<6
Copper, Total		1700	6.5	4.8	18	7.2	4.6
Lead, Total		400	8.7	<6	17	7.6	<5
Mercury, Total		87.60	0.2	0.16	<0.1	<0.1	<0.1
Nickel, Total		10000	4	2.8	18	8.3	4.6
Selenium, Total		7300	0.56	<0.5	<0.6	<0.5	<0.5
Silver, Total		7300	<1	<1	2.4	<1	<1
Zinc, Total		10000	6.9	7.9	66	10	12
Sum of Concentrations			74.85	28.95	164.50	106.37	26.33

**Values represent total concentrations unless noted** < = Not detected at indicated reporting limit ... = Not analyzed

For RCL INORG

## Analytical Summary - Inorganics in Soils

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## Transportation Area - Former USTs

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## Voluntary Site-Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

SITE	03GP028	
SAMPLE ID.	03PS02814	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP
	DEPTH (ft)	Tier II
	RESULT TYPE	Non-Residential Primary
Arsenic, Total	438	0.66
Barium, Total	10000	<6
Chromium, Total		<5
Copper, Total	1700	4.4
Lead, Total	400	<6
Mercury, Total	87.60	<0.1
Nickel, Total	10000	4.5
Selenium, Total	7300	<0.5
Silver, Total	7300	<1
Zinc, Total	10000	12
Sum of Concentrations		27.06

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater  
Transportation Area - Former USTs  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in µg/l)	SITE	03GP024	03GP026	03GP028	03GP029	
	SAMPLE ID	1996 VRP	03PW0241B	03PW0251B	03PW0281B	
	DATE	Tier II	10/29/96	10/29/96	10/30/96	
Vinyl chloride	10	[130]	<2	9.8	[16]	<2
Ethylbenzene	10220	120	<6	<6	<6	<6
Methyl(tert)butyl Ether	6950	130	<50	<50	<60	<50
Toluene	20440	<5	<6	<6	<6	34
Isopropylbenzene	1.02E + 4	90	<6	<6	<6	<6
2-Methylnaphthalene	2040.00	20	<10	<10	<10	<10
Naphthalene	4088	20	<6	<6	<6	<6
1,2,4-Trimethylbenzene	5.11E + 3	62	<6	<6	<6	<6
1,1-Dichloroethane	10220	60	<6	<6	<6	<6
1,1-Dichloroethene	7	[15]	<6	<6	<6	[100]
cis-1,2-Dichloroethene	1022	200	<6	<6	<6	[1200]
trans-1,2-Dichloroethene	2040	<6	<6	<6	<6	43
1,1,1-Trichloroethane	9198	94	<6	<6	<6	540
Trichloroethylene	280	[160.8]	<6	<6	<6	[1400]
Sum of Concentrations		1101.00	0.00	9.90	16.00	3317.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater

For RCL VNC1 Criteria Comparison 1996 VRG Final N. President

**Analytical Summary - VOCs in Groundwater  
Transportation Area - Former USTS  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	03GP036
	SAMPLE ID	03PW03622
	DATE	04/23/97
	RESULT TYPE	Non-Residential
Vinyl chloride	10	<2
Ethylbenzene	10220	<5
Methyl(tertbutyl Ether	6950	<50
Toluene	20440	<5
Isopropylbenzene	1.02E+4	<5
2-Methylnaphthalene	2040.00	<10
Naphthalene	4088	<5
1,2,4-Trimethylbenzene	5.11E+3	<5
1,1-Dichloroethane	10220	<5
1,1-Dichloroethene		<5
cis-1,2-Dichloroethene	1022	<5
trans-1,2-Dichloroethene	2040	<5
1,1,1-Trichloroethane	9198	<5
Tetrachloroethylene	260	<5
<b>Sum of Concentrations</b>	<b>0.00</b>	

**Analytical Summary - VOCs in Soils**  
**Plant 11 - Heat Treat Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	06GP008
	SAMPLE ID	06PS00816
	DATE	1996 VRP
	DEPTH (ft)	Tier II
RESULT TYPE	Non-Residential	Primary
Ethyl benzene	1000	0.41
1,3,5-Trimethylbenzene	1.00E + 03	0.38
1,2,4-Trimethylbenzene	1.00E + 3	1.2
Naphthalene	10000	0.894
Sum of Concentrations		2.88

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC Criteria Comparison - 1996 VRP Tier II N. Presiden

**Analytical Summary - PNAs in Soils**  
**Plant 11 - Heat Treat Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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COURT BLDG, INDIANAPOLIS			
CONSTITUENT	(Units in mg/kg)	SITE	SAMPLE ID
		06GP008	06PS00816
DEPTH (ft)	Tier II	12/16/96	12/16/96
RESULT TYPE	Non-Residential	Primary	
Fluoranthene	10000	0.45	
Naphthalene	10000	0.89#	
Sum of Concentrations		1.34	

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

# = Constituent in more than one test method, highest result reported.

Criteria Comparison 1996 VBP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 11 - Heat Treat Operations

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
06GP007	12/16/96	4.00	Prim	<10
06GP007	12/16/96	8.00	Prim	<10
06GP007	12/16/96	14.00	Prim	38
06GP008	12/16/96	4.00	Prim	<10
06GP008	12/16/96	8.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit -- = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Area 6 - Plant 12 Machinery Sumps

Date: 09/29/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO	
			TYPE	(mg/kg)	Sum (mg/kg)
<b>1996 VRP Tier II Non-Residential</b>					
06GP001	11/11/96	4.00	Prim	<10	0.00
06GP001	11/11/96	8.00	Prim	<10	0.00
06GP001	11/11/96	19.00	Prim	<10	0.00
06GP003	11/12/96	4.00	Prim	<10	0.00
06GP003	11/12/96	12.00	Prim	<10	0.00
06GP003	11/12/96	19.00	Prim	<10	0.00
06GP004	11/13/96	4.00	Prim	<10	0.00
06GP004	11/13/96	11.00	Prim	11	11.00
06GP005	11/13/96	4.00	Prim	42	42.00
06GP005	11/13/96	12.00	Prim	<10	0.00
06GP005	11/13/96	16.00	Prim	<10	0.00
06GP005	11/13/96	16.00	Dup 1	<10	0.00
06GP006	11/14/96	4.00	Prim	98 PI	98.00
06GP006	11/14/96	12.00	Prim	240 PI	240.00
06GP006	11/14/96	16.00	Prim	2400 PI	2400.00

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater  
Area 6 - Plant 12 Machinery Sumps  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	06GP003	06GP004	06GP005
	SAMPLE ID	1996 VRP	06PW00320	06PW00420
	DATE	Tier II	11/12/96	11/13/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary
1,1-Dichlorethane	10220	<5	5.3	<5
cis-1,2-Dichlorethane	1022	180	<6	20
Trichlorethane	260	81 J	<5	21
Sum of Concentrations		271.00	5.30	41.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following Qualifier(s) exist: J

For RCL VOC1

Criteria Comparison-1996 VRP-Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**Allied Signal Industrial Complex**  
**South Bend, Indiana**

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Date: 09/29/99

South Bend, Indiana						
	SITE	05GP055	06GP055	05GP055	06GP061	05GP061
	SAMPLE ID	05PS05504	05PS05508	05PS05512	05PS06104	05PS06108
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/13/96	11/13/96	11/13/96	11/15/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene		10000	<0.05#	<0.25	<0.26	<0.25
Aconophthrene		1.0E+04	<0.33	---	---	<0.33
2-Methylnaphthalene		10000	<0.1#	<0.5	<0.5	<0.5
Tetrachloroethene		8.01	<0.05	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

**Values represent total concentrations unless noted**    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	05GP061	06GP004	07GP001	07GP001	07GP001
	SAMPLE ID	05PS06116	06PS00408	07PS00104	07PS00106	07PS00114
	DATE	1996 VRP	11/15/96	11/13/96	10/22/96	10/22/96
DEPTH (ft)	Tier II	16.00	8.00	4.00	8.00	14.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Naphthalene	10000	<0.26	<0.06#	<0.26	<0.26	<0.26
Acenaphthene	1.0E+04		<0.39			
2-Methylnaphthalene	10000	<0.5	<0.1	<0.5	<0.5	<0.5
Tetrachloroethene	8.01	<0.1	<0.06	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted <= Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

RCL, **via Comparison**, VRP, **All Nodes**

**Analytical Summary - VOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana						
	SITE	07GP002	07GP002	07GP002	07GP002	07GP002
CONSTITUENT (Units in mg/kg)	SAMPLE ID	07PS00204	07QD00204	07PS00208	07QD00208	07PS00212
	DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/22/96
	DEPTH (ft)	Tier II	4.00	4.00	8.00	8.00
RESULT TYPE	Non-Residential	Primary	Duplicate-1	Primary	Duplicate-1	Primary
Naphthalene	10000	<0.06#	34#	<0.26	<0.25	<0.25
Acenaphthene	1.0E+04	<0.33	13	...	...	...
2-Methylnaphthalene	10000	<0.1#	12#	<0.6	<0.6	<0.6
Tetrachloroethene	8.01	0.48 J	0.14	<0.1	<0.1	0.1
Sum of Concentrations		0.48	59.14	0.00	0.00	0.10

**Analytical Summary - VOCs in Soils  
Area 7 - Solid Waste Management Units  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	07GP002	07GP003	07GP003	07GP003	07GP006
	SAMPLE ID	07PS00216	07PS00304	07PS00308	07P600316	07P600504
	DATE	1996 VRP	10/22/96	10/23/96	10/23/96	10/23/96
	DEPTH (ft)	Tier II	16.00	4.00	8.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.05#
Acenaphthene	1.0E+04					<0.33
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.1
Tetrachloroethene	8.01	0.44	1.4	0.21	0.31	<0.05
Sum of Concentrations		0.44	1.40	0.21	0.31	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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See RCL VOC

Criteria Comparison 1006 VRP Type II Non-Residen

**Analytical Summary - VOCs in Soils  
Area 7 - Solid Waste Management Units  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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South Bend, Indiana						
SITE		07GP006	07GP006	07GP006	07GP006	07GP006
SAMPLE ID		07PS00604	07PS00608	07PS00612	07QD00612	07PS00616
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/16/96	11/16/96	11/16/96	11/16/96
DEPTH (ft)	Tier: II	4.00	8.00	12.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate_1	Primary
Naphthalene		10000	<0.25	<0.33#	<0.25	<0.25
Acenaphthene		1.0E+04		<0.33		
2-Methylnaphthalene		10000	<0.5	<0.33#	<0.5	<0.5
Tetrachloroethane		8.01	<0.1	<0.06	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Soils  
Area 7 - Solid Waste Management Units  
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South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	07GP007	07GP007	07GP007	07QP006	07QP006
	SAMPLE ID	07PS00704	07PS00712	07PS00716	07PS00804	07PS00808
	DATE	1996.VRP	11/15/96	11/15/96	11/15/96	11/17/96
DEPTH (ft)	Tier II	4.00	12.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.05#
Acenaphthene	1.0E+04	---	---	---	---	<0.33
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.1#
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.05
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

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**Analytical Summary - VOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana					
CONSTITUENT CONSTITUENT CONSTITUENT	SITE	07GP008	07GP008	07GP008	
	SAMPLE ID	07PS00812	07PS00819		
	DATE	1996 VRP	11/17/96	11/17/96	12/17/96
	DEPTH (ft)	Tier II	12.00	19.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	
Naphthalene	10000	<0.25	<0.25	<0.33#	
Acenaphthene	1.0E+04			<0.33	
2-Methylnaphthalene	10000	<0.6	<0.5	<0.33#	
Tetrachloroethene	8.01	<0.1	<0.1	0.10	
Sum of Concentrations	0.00	0.00	0.00	0.10	

**Analytical Summary - SVOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT	SITE	South Bend, Indiana					
		SAMPLE ID	05GP055	05GP055	05GP055	05QP061	05QP061
		DATE	1996 VRP	11/13/96	11/13/96	11/13/96	11/16/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00	8.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
2-Methylnaphthalene		10000	< 0.1#	< 0.5	< 0.5	< 0.5	< 0.33#
Acenaphthene		1.0E+04	< 0.33				< 0.33
Anthracene		1.00E+04	< 0.33	---	---	---	< 0.33
Benzo (a) anthracene		103.8	< 0.33	---	---	---	< 0.33
Benzo (b) pyrene		69.85	< 0.33	---	---	---	< 0.33
Benzo (b) fluoranthene		354.88	< 0.33	---	---	---	< 0.33#
Benzo (ghi) perylene			< 0.33	---	---	---	< 0.33
Carbazole		1.00E+04	< 0.33				< 0.33
Chrysene		1.00E+04	< 0.33	---	---	---	< 0.33
Fluoranthene		10000	< 0.33				< 0.33
Fluorene		1.00E+04	< 0.33	---	---	---	< 0.33
Naphthalene		10000	< 0.06#	< 0.25	< 0.25	< 0.25	< 0.33#
Phenanthrene		1.00E+04	< 0.33	---	---	---	< 0.33
Pyrene		10000	< 0.33	---	---	---	< 0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

# = Constituent in more than one test method, highest result reported. ? = Duplicate record found, Data review required.

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Analytical Summary - SVOCs in Soils  
 Area 7 - Solid Waste Management Units  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	05GP061	06GP004	07GP001	07GP001	07GP001
SAMPLE ID	05PS06116	06PS00408	07PS00104	07PS00108	07PS00114
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/15/96	11/13/96	10/22/96
DEPTH (ft)	Tier II	16.00	8.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2-Methylnaphthalene		10000	<0.5	<0.1	<0.5
Acenaphthene		1.0E+04		<0.33	
Anthracene		1.00E+04	---	<0.33	---
Benz (a) anthracene		103.8		<0.33	
Benz (b) pyrene		69.85	---	<0.33	---
Benz (b) fluoranthene		354.98		<0.33	
Benz (ghi) perylene			<0.33		
Carbazole		1.00E+04	---		
Chrysene		1.00E+04		<0.33	
Fluoranthene		10000	---	<0.33	
Fluorene		1.00E+04	---	<0.33	---
Naphthalene		10000	<0.25	<0.05#	<0.25
Phenanthrene		1.00E+04	---	<0.33	---
Pyrene		10000		<0.33	
Sum of Concentrations		0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed					
# = Constituent in more than one test method, highest result reported.					
For RCL SVOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

Analytical Summary - SVOCs in Soils  
 Area 7 - Solid Waste Management Units  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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SITE	07GP002	07GP002	07GP002	07GP002	07GP002
SAMPLE ID	07PS00204	07QD00204	07PS00208	07QD00208	07PS00212
CONSTITUENT (Units in mg/kg)	DATE	1998 VRP	10/22/96	10/22/96	10/22/96
	DEPTH (ft)	Tier II	4.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary
2-Methylnaphthalene		10000	<0.1#	12#	<0.5
Acenaphthene		1.0E+04	<0.33	13	---
Anthracene		1.0E+04	<0.33	30	---
Benzo (a) anthracene		103.8	<0.33	18	---
Benzo (b) pyrene		69.85	<0.33	26	---
Benzo (b) fluoranthene		364.98	0.39J	47	---
Benzo (ghi) perylene			<0.33	14	---
Carbazole		1.00E+04	<0.33	14	---
Chrysene		1.00E+04	<0.33	25	---
Fluoranthene		10000	0.65J	76	---
Fluorene		1.00E+04	<0.33	21	---
Naphthalene		10000	<0.06#	34#	<0.26
Phenanthrene		1.00E+04	0.55	97	---
Pyrene		10000	0.41	61	---
Sum of Concentrations		1.90	475.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL SVOC

Criteria Comparison: 1998 VRP Tier II Non-Residential

**Analytical Summary - SVOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
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**Analytical Summary - SVOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
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CONSTITUENT (Units in mg/kg)	SITE	07GP008	07GP008	07GP008	07GP008	07GP008
	SAMPLE ID	07PS00604	07PS00608	07PS00612	07GD00612	07PS00616
	DATE	1996 VRP	11/16/96	11/16/96	11/16/96	11/16/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
2-Methylnaphthalene	10000	<0.5	<0.33#	<0.6	<0.6	<0.5
Aceanaphthene	1.0E+04	---	<0.33	---	---	---
Anthracene	1.00E + 04	---	<0.33	---	---	---
Benzo (a) anthracene	103.8	---	<0.33	---	---	---
Benzo (b) pyrene	69.85	---	<0.33	---	---	---
Benzo-(b) fluoranthene	354.98	---	<0.33?	---	---	---
Benzo (ghi) perylene	---	---	<0.33	---	---	---
Carbazole	1.00E+04	---	<0.33	---	---	---
Chrysene	1.00E+04	---	<0.33	---	---	---
Fluoranthene	10000	---	0.69	---	---	---
Fluorene	1.00E+04	---	<0.33	---	---	---
Naphthalene	10000	<0.26	<0.33#	<0.26	<0.25	<0.26
Phenanthrene	1.00E+04	---	0.77	---	---	---
Pyrene	10000	---	0.44	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>1.90</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

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For RCL SVOC

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - SVOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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South Bend, Indiana						
	SITE	07GP007	07GP007	07GP007	07GP008	07GP008
	SAMPLE ID	07PS00704	07PS00712	07PS00716	07PS00804	07PS00806
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/15/96	11/15/96	11/15/96
	DEPTH (ft)	Tier II	4.00	12.00	16.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
2-Methylnaphthalene		10000	< 0.5	< 0.5	< 0.5	< 0.1#
Acenaphthene		1.0E+04	---	---	---	< 0.33
Anthracene		1.00E + 04	---	---	---	< 0.33
Benzo (a) anthracene		103.8	---	---	---	< 0.33
Benzo (b) pyrene		69.85	---	---	---	< 0.33
Benzo (b) fluoranthene		354.98	---	---	---	< 0.33#
Benzo (ghi) perylene		---	---	---	---	< 0.33
Carbazole		1.00E + 04	---	---	---	< 0.33
Chrysene		1.00E + 04	---	---	---	< 0.33
Fluoranthene		10000	---	---	---	< 0.33
Fluorene		1.00E + 04	---	---	---	< 0.33
Naphthalene		10000	< 0.25	< 0.25	< 0.25	< 0.06#
Phenanthrene		1.00E + 04	---	---	---	< 0.33
Pyrene		10000	---	---	---	< 0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. ? = Duplicate records found. Data review required.

**For RCL SVOC**      **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - SVOCs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT (Units in mg/kg)	SITE	07GP006	07GP008	07GP009
	SAMPLE ID	07PS00812	07PS00819	
	DATE	1996 VRP	11/17/96	11/17/96
DEPTH (ft)	Tier II	12.00	19.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary
2-Methylnaphthalene	10000	<0.6	<0.6	<0.33#
Acenaphthene	1.0E+04	---	---	<0.33
Anthracene	1.00E+04	---	---	<0.33
Benzo (a) anthracene	103.8	---	---	<0.33
Benzo (b) pyrene	69.85	---	---	<0.33
Benzo (b) fluoranthene	354.98	---	---	<0.33?
Benzo (ghi) perylene		---	---	<0.33
Carbazole	1.00E+04	---	---	<0.33
Chrysene	1.00E+04	---	---	<0.33
Fluoranthene	10000	---	---	<0.33
Fluorene	1.00E+04	---	---	<0.33
Naphthalene	10000	<0.26	<0.26	<0.33#
Phenanthrene	1.00E+04	---	---	<0.33
Pyrene	10000	---	---	<0.33
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported. ? = Duplicate record found, Data review required. The following qualifier(s) exist: J

RCL AVOC

Media Comparison VRP All Non-Residential

## Analytical Summary - TPH/DROs in Soils

## Area 7 - Solid Waste Management Units

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRP Tier II Non-Residential				6000
05GP055	11/13/96	8.00	Prim	12
05GP055	11/13/96	12.00	Prim	12
06GP004	11/13/96	4.00	Prim	<10
06GP004	11/13/96	11.00	Prim	11
06GP006	11/14/96	4.00	Prim	98 PI
06GP006	11/14/96	12.00	Prim	240 PI
06GP006	11/14/96	16.00	Prim	2400 PI
07GP001	10/22/96	4.00	Prim	17
07GP001	10/22/96	8.00	Prim	<10
07GP001	10/22/96	14.00	Prim	<10
07GP002	10/22/96	8.00	Prim	<10
07GP002	10/22/96	12.00	Prim	<10
07GP002	10/22/96	16.00	Prim	<10
07GP003	10/23/96	4.00	Prim	560
07GP003	10/23/96	8.00	Prim	<10
07GP003	10/23/96	15.00	Prim	<10
07GP005	11/14/96	8.00	Prim	<10
07GP005	11/14/96	12.00	Prim	<10
07GP005	11/14/96	15.00	Prim	<10
07GP006	11/15/96	4.00	Prim	100 PI
07GP006	11/15/96	12.00	Prim	<10
07GP006	11/15/96	16.00	Prim	<10
07GP007	11/15/96	4.00	Prim	<10
07GP007	11/15/96	12.00	Prim	<10
07GP007	11/15/96	16.00	Prim	<10
07GP008	11/17/96	4.00	Prim	<10
07GP008	11/17/96	12.00	Prim	<10
07GP008	11/17/96	19.00	Prim	3300 PI
07GP009	12/17/96	4.00	Prim	420 PI
07GP009	12/17/96	8.00	Prim	<10
07GP009	12/17/96	14.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - PCBs in Soils  
Area 7 - Solid Waste Management Units  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 10/25/99

CONSTITUENT (Units in mg/kg)	SITE	05GP056	07GP002	07GP002	07GP005	07GP006
	SAMPLE ID	05PS05504	07PS00204	07QD00204	07PS00504	07P600608
	DATE	1996 VRP	11/13/96	10/22/96	10/22/96	11/14/96
DEPTH (ft)	Tier II	4.00	4.00	4.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Primary
PCB-1016		4.23	<0.33	<0.33	<0.33	<0.33
PCB-1221		4.23	<0.33	<0.33	<0.33	<0.33
PCB-1232		4.23	<0.33	<0.33	<0.33	<0.33
PCB-1242		4.23	<0.33	<0.33	<0.33	<0.33
PCB-1248		1.28E+00	<0.33	<0.33	<0.33	<0.33
PCB-1254		3.05E+00	<0.33	<0.33	<0.33	<0.33
PCB-1260		4.23	<0.33	<0.33	<0.33	<0.33
Sum of Concentrations			0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL PCB

Criteria Comparison 1996 VRP-Tier II Non-Residential

**Analytical Summary - PCBs in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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SOUTH BEND, INDIANA				
CONSTITUENT (Units in mg/kg)	SITE	07GP008	07GP009	
	SAMPLE ID	07PS00808		
	DEPTH (ft)	Tier II	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	
PCB-1016	4.23	< 9.6	< 0.33	
PCB-1221	4.23	< 9.6	< 0.33	
PCB-1232	4.23	< 9.6	< 0.33	
PCB-1242	4.23	< 9.6	< 0.33	
PCB-1248	1.28E +00	< 9.6	< 0.33	
PCB-1254	3.06E +00	< 9.6	< 0.33	
PCB-1260	4.23	< 9.6	< 0.33	
Sum of Concentrations		0.00	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PCB

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Soils  
Area 7 - Solid Waste Management Units  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT	SITE	05GP055	05GP056	05GP056	07GP001	07GP001
	SAMPLE ID	05PS05504	05PS05508	06PS05512	07PS00104	07PS00108
	(Units in mg/kg)	DATE	1996 VRP	11/13/96	11/13/96	10/22/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	3.8	0.92	1.7	6.7
Barium, Total		10000	9.4	5.9	7.5	36
Cadmium, Total		730.0	<1	<1	<1	22
Chromium, Total			5.4	<5	<5	<5
Copper, Total		1700	6.8	6.4	4.0	120
Lead, Total		400	<5	<5	5	33
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	5.9	5.3	3.3	42
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	<1	1.7
Zinc, Total		10000	18	13	13	100
Cyanide, total		10000	---	---	---	---
Sum of Concentrations		49.20	30.52	35.10	322.60	39.40

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCI INORG

Criteria Comparison 1996 VPP Tier II New Presidents

**Analytical Summary - Inorganics in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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**South Bend, Indiana**

	SITE	07GP001	07GP002	07GP002	07GP002	07GP002	
	SAMPLE ID	07PS00114	07PS00204	07QD00204	07PS00208	07PS00212	
CONSTITUENT	(Units in mg/kg)	DATE	10/22/96	10/22/96	10/22/96	10/22/96	
	DEPTH (ft)	Tier II	14.00	4.00	4.00	8.00	
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	
						Primary	
Arsenic, Total		438	1.5	6.7	6.3	3.7	0.84
Barium, Total		10000	10	97	82	4.6	3.5
Cadmium, Total		730.0	<1	6.3	11	<1	<1
Chromium, Total			17	7.9	13	<5	<5
Copper, Total		1700	10	20	44	4	3.7
Lead, Total		400	<5	38	58	<5	<5
Mercury, Total		87.60	<0.1	0.2	0.18	<0.1	<0.1
Nickel, Total		10000	4.4	8.3	16	3	4.3
Selenium, Total		7300	<0.6	1.5	1.2	<0.5	<0.5
Silver, Total		7300	1	2.6	2.6	<1	<1
Zinc, Total		10000	15	32	170	13	12
Cyanide, total		10000	...	<0.5	1.2	...	...
Sum of Concentrations			58.90	220.50	404.38	28.30	24.34

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - Inorganics in Soils  
 Area 7 - Solid Waste Management Units  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT	(Units in mg/kg)	SITE	07GP002	07GP002	07GP003	07GP003	07GP003
		SAMPLE ID	07QD00212	07PB00216	07PS00304	07PS00306	07P600316
DATE	1996 VRP		10/22/96	10/22/96	10/23/96	10/23/96	10/23/96
DEPTH (ft)	Tier II		12.00	16.00	4.00	8.00	16.00
RESULT TYPE	Non-Residential	Duplicate-1		Primary	Primary	Primary	Primary
Arsenic, Total		438	1	2	4.8	7.1	5.1
Barium, Total		10000	37	37	49	6.7	11
Cadmium, Total		730.0	<1	<1	<1	<1	<1
Chromium, Total			<5	12	5.6	<6	0.8
Copper, Total		1700	3.4	17	4.7	3.7	17
Lead, Total		400	<5	7.8	14	<5	17
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	4.2	13	5.7	6	9.9
Selenium, Total		7300	<0.5	<0.5	0.85	<0.5	<0.5
Silver, Total		7300	<1	2.1	1.4	<1	1.6
Zinc, Total		10000	14	36	12	16	32
Cyanide, total		10000			..		
Sum of Concentrations			26.30	125.90	97.75	38.50	103.30

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCRA HWRG

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils

### Area 7 - Solid Waste Management Units

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## **Voluntary Site Investigation**

## AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	07GP004	07GP004	07GP004	07GP004	07GP005
	SAMPLE ID	07PS00404	07PS00408	07PS00412	07PS00415	07PS00504
	DATE	1996 VRP	11/14/96	11/14/96	11/14/96	11/14/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	15.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	16	0.38	0.33	0.63	9.3
Barium, Total	10000	33	5.4	7.4	8.6	35
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		5.5	<5	<5	<5	11
Copper, Total	1700	1.5	3.1	2.7	3	5.9
Lead, Total	400	<6	<6	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	1.9	4.6	2.7	2.7	6.1
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	1	<1	<1	<1	2.1
Zinc, Total	10000	<5	12	8.5	9.3	17
Cyanide, total	10000	<0.6	—	—	—	<0.5
Sum of Concentrations	59.00	25.46	21.63	24.13	86.40	

Analytical Summary - Inorganics in Soils  
 Area 7 - Solid Waste Management Units  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	07GP006	07GP006	07GP006	07GP006	07GP006	
	SAMPLE ID	07PS00604	07PS00608	07PS00612	07QD00612	07PS00816	
	DATE	1996 VRP	11/15/96	11/15/96	11/15/96	11/15/96	
DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00	16.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary	
Arsenic, Total		438	2.2	1.6	0.93	1.1	0.78
Barium, Total		10000	24	29	4.8	6.3	5.4
Cadmium, Total		730.0	<1	<1	<1	<1	<1
Chromium, Total			6.9	7.8	<5	<5	<5
Copper, Total		1700	44	5.3	1.7	3.2	3.3
Lead, Total		400	45	8.1	<5	<5	<5
Mercury, Total		87.60	0.14	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	6.5	3.8	2.3	3.7	9.2
Selenium, Total		7300	<0.5	<0.57	<0.5	<0.6	<0.6
Silver, Total		7300	<1	<17	<1	<1	<1
Zinc, Total		10000	35	217	5.9	9.4	22
Cyanide, total		10000	--	<0.5	--	--	--
Sum of Concentrations		162.74	76.80	15.63	23.70	40.68	
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
? = Duplicate records found, Data review required.							
RCL INORG							
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**Analytical Summary - Inorganics in Soils**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**

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AlliedSignal Industrial Complex  
South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	07GP007	07GP007	07GP007	07GP008	07GP008
	SAMPLE ID	07PS00704	07PS00712	07PS00718	07PS00804	07PS00808
	DATE	1996 VRP	11/16/96	11/16/96	11/15/96	11/17/96
DEPTH (ft)	Tier II	4.00	12.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.28	0.88	0.98	3.1	2.6
Barium, Total	10000	5.4	5.3	4.8	34	19
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total	10000	<5	<5	<5	9.6	5.1
Copper, Total	1700	3.3	2	9.1	4.3	4.6
Lead, Total	400	<5	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	9.1	2	14	5.2	4.6
Selenium, Total	7300	<0.6	<0.6	<0.6	<0.5	<0.57
Silver, Total	7300	<1	<1	<1	1.7	1.17
Zinc, Total	10000	22	<6	21	13	147
Cyanide, total	10000	—	—	—	—	<0.5 J
<b>Sum of Concentrations</b>	<b>40.08</b>	<b>10.18</b>	<b>49.88</b>	<b>70.90</b>	<b>60.90</b>	

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

? = Duplicate records found, Data review required.

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Soils  
Area 7 - Solid Waste Management Units  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	07GP008	07GP008	07GP008	07GP009
	SAMPLE ID	07PS00812	07P600819	07QD00819	
	DATE	1996 VRP	11/17/96	11/17/96	11/17/96
DEPTH (ft)	Tier II	12.00	19.00	19.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
Arsenic, Total	438	0.6	2.8 J	1.3	0.53
Barium, Total	10000	6.1	32 J	10	7.5
Cadmium, Total	730.0	<1	<1	<1	<1
Chromium, Total		<5	8.3 J	<5	<5
Copper, Total	1700	3.6	4.4	6.2	3.6
Lead, Total	400	<5	<5	<5	<5
Mercury, Total	87.80	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	2.6	4.6	4.6	4.2
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5?
Silver, Total	7300	<1	1.6	<1	<1?
Zinc, Total	10000	9.3	11	15	11.2
Cyanide, total	10000	---	---	---	<0.5
Sum of Concentrations		22.00	64.70	37.10	28.83

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

? = Duplicate records found, Data review required. The following qualifier(s) exist: J

For RCL-IMORG

Criteria Comparison 1996 VRP Test II National President

**Analytical Summary - VOCs in Groundwater**  
**Area 7 - Solid Waste Management Units**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Values represent total concentrations unless noted    <=Not detected at indicated reporting limit    --- Not analyzed

| = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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CONSTITUENT (Units in mg/kg)	SITE	08GP001	08GP001	08GP001	08GP002	08GP002
	SAMPLE ID	08PS00108	08PS00112	08PS00116	08P600208	08P600212
	DATE	1996.VRP	10/07/96	10/07/96	10/07/96	10/08/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.26	<0.26	<0.26	<2.6	<0.26
Ethylbenzene	1000	<0.26	<0.26	<0.26	<2.6	<3
Xylene (total)	1000	<0.26	<0.26	0.67 J	<2.6	<0.26
Isopropylbenzene	1.0E+03	<0.26	<0.26	<0.26	<2.6	3.8
n-Propylbenzene	1.00E+03	<0.26	<0.26	1.3 J	<2.6	<0.26
1,3,5-Trimethylbenzene	1.00E+03	<0.26	<0.26	0.64 J	<2.6	<0.26
1,2,4-Trimethylbenzene	1.00E+03	<0.26	<0.26	1.1 J	6.2	1.4
Naphthalene	10000	<0.26	<0.26	0.36 J	2.8	1.6
2-Methylnaphthalene	10000	<0.5	<0.5	0.52 J	8.5	8.2
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	57	0.14
cis 1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	6.4	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	7.2	0.58
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.1	<0.1	3.3	<0.1
Sum of Concentrations		0.00	0.00	4.49	89.40	16.62

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**Analytical Summary - VOCs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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### **South Bend, Indiana**

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**South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	08GP002	08GP002	08GP003	08GP003	08GP003
	SAMPLE ID	08PS00214	08PS00216	08PS00308	08PS00312	08PS00314
	DATE	1996 VRP	10/08/96	10/08/96	10/08/96	10/08/96
DEPTH (ft)	Tier II	14.00	16.00	8.00	12.00	14.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.71 IN	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.71 IN	2.4	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.71 IN	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.71 IN	2.8	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.71 IN	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.71 IN	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	0.99	1.2	<0.25	<0.25	<0.25
Naphthalene	10000	<0.71 IN	0.68	<0.25	<0.25	<0.25
2-Methylnaphthalene	10000	<0.71 IN	1.6	<0.6	<0.5	<0.5
1,1-Dichloroethane	1000	<0.71 IN	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.48	<0.71 IN	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.71 IN	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.71 IN	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.71 IN	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.71 IN	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.99	8.78	0.00	0.00	0.00

Analytical Summary - VOCs in Soils  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	08GP004	08GP004	08GP004	08GP005	08GP005
	SAMPLE ID	08PS00408	08PS00412	08PS00416	08PS00504	08PS00508
	DATE	1996 VRP	10/08/96	10/08/96	10/08/96	10/09/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+3	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Chlorobenzene		3.18E+02	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>			0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs In Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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**Analytical Summary - VOCs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
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CONSTITUENT (Units in mg/kg)	SITE	08GP007	08GP007	08GP008	08GP008	08GP008	
	SAMPLE ID	08PS00712	08QD00712	08PS00804	08P600812	08P600816	
	DATE	1996 VRP	10/09/96	10/09/96	10/14/96	10/14/96	
	DEPTH (ft)	Tier II	12.00	12.00	4.00	12.00	16.00
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Toluene		1000	<0.26	<0.26	<0.05	<0.05	<0.05
Ethyl benzene		1000	<0.26	<0.26	<0.05	<0.05	3.3
Xylenes (total)		1000	<0.26	<0.26	<0.05	<0.05	1.4
Isopropylbenzene		1.0E+03	<0.26	<0.26	<0.05	<0.05	3.6
n-Propylbenzene		1.00E+03	<0.26	<0.26	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.26	<0.26	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene		1.00E+3	<0.26	<0.26	<0.05	<0.05	2.7
Naphthalene		10000	<0.26	<0.26	<0.05	<0.05	<0.05
2-Methylnaphthalene		10000	<0.5	<0.5	<0.1	<0.1	<0.1
1,1-Dichloroethene		1000	<0.1	<0.1	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.05	<0.05	<0.05
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.05	<0.05	<0.05
Chlorobenzene		3.16E+02	<0.1	<0.1	<0.05	<0.05	<0.05
Tetrachloroethane		8.01	<0.1	<0.1	<0.05	<0.05	<0.05
Trichloroethane		25.73	<0.1	<0.1	<0.05	<0.05	<0.05
Sum of Concentrations			0.00	0.00	0.00	0.00	10.80

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**Analytical Summary – VOCs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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AlliedSignal Industrial Complex

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CONSTITUENT (Units in mg/kg)	SITE	08GP009	08GP009	08GP009	08GP009	08GP009
	SAMPLE ID	08PS00904	08PS00908	08PS00912	08QD00912	08QD00912
	DATE	1996 VRP	10/21/96	10/21/96	10/21/96	10/21/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Duplicate 2
Toluene	1000	<0.25	<0.25	<0.05	---	---
Ethylbenzene	1000	<0.25	<0.25	<0.05	---	---
Xylene (total)	1000	<0.25	<0.25	<0.1	---	---
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.01	---	---
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.01	---	---
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.01	---	---
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.01	---	---
Naphthalene	10000	<0.25	<0.25	<0.05#	<0.33	<0.33
2-Methylnaphthalene	10000	<0.5	<0.5	<0.1	---	<0.33
1,1-Dichloroethane	1000	<0.1	<0.1	<0.05	---	---
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.05	---	---
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.05	---	---
Chlorobenzene	3.16E+02	<0.1	<0.1	<0.05	---	---
Tetrachloroethene	8.01	<0.1	<0.1	<0.05	---	---
Trichloroethane	25.73	<0.1	<0.1	<0.05	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Analytical Summary - VOCs in Soils  
 Area 8 - I-Beam Building Former Stormwater Drainage System  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	08GP010	08GP010	08GP010	08GP011	08GP011
	SAMPLE ID	08PS01004	08PS01008	08PS01014	08PS01104	08PS01108
DATE	1996 VRP	10/21/96	10/21/96	10/21/96	10/22/96	10/22/96
DEPTH (ft)	Tier II	4.00	8.00	14.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25 E	<0.25	3.7	<0.25	<0.25
Ethylbenzene	1000	<0.25 E	<0.25	<0.56	<0.25	<0.25
Xylene (total)	1000	<0.25 E	<0.25	2.8	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25 E	<0.25	<0.56	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25 E	<0.25	<0.56	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25 E	<0.25	6.7	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25 E	<0.25	8.8	<0.25	<0.25
Naphthalene	10000	<0.25 E	<0.25	<0.56	<0.25	<0.25
2-Methylnaphthalene	10000	<0.5 E	<0.5	<1.1	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1 E	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethane	102.49	<0.1 E	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1 E	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	3.16E+02	<0.1 E	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1 E	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1 E	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	22.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
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Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
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	SITE	08SD001	08SD002		
	SAMPLE ID	08SD00101	08SD00201		
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	10/24/96	10/24/96
		DEPTH (ft)	Tier II	1.00	1.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Toluene		1000	<0.25	<0.05	
Ethyl benzene		1000	<0.25	<0.05	
Xylene (total)		1000	<0.25	<0.1	
Isopropylbenzene		1.0E + 03	<0.25	<0.01	
n-Propylbenzene		1.00E + 03	<0.25	<0.01	
1,3,5-Trimethylbenzene		1.00E + 03	<0.25	<0.01	
1,2,4-Trimethylbenzene		1.00E + 3	<0.25	<0.01	
Naphthalene		10000	<0.25	<0.05#	
2-Methylnaphthalene		10000	<0.5	<0.1	
1,1-Dichloroethane		1000	<0.1	<0.05	
cis-1,2-Dichloroethene		102.49	<0.1	<0.05	
1,1,1-Trichloroethane		1000	<0.1	<0.05	
Chlorobenzene		3.16E + 02	<0.1	<0.05	
Tetrachloroethene		8.01	<0.1	<0.05	
Trichloroethane		25.73	<0.1	<0.05	
Sum of Concentrations			0.00	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method; highest result reported. The following quality(s) exist: J, I, N, E

For RCL VOC Criteria Comparison 16

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**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
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SITE	08GP002	08GP002	08GP003	08GP003	08GP003
SAMPLE ID	08PS00214	08PS00216	08PS00308	08P600312	08P600314
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/08/96	10/08/96	10/08/96
DEPTH (ft)	Tier II	14.00	16.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene	10000	<0.71 IN	0.88	<0.26	<0.26
Sum of Concentrations		0.00	0.88	0.00	0.00

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

# = Constituent found in more than one test method, highest result reported.

RCL DATA

Ontario Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary – PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**

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## **Voluntary Site Investigation**

## AlliedSignal Industrial Complex

## **South Bend, Indiana**

**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Plainfield, NJ**

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AlliedSignal Industrial Complex

**South Bend, Indiana**

Soil Test Results - 1996 VRP Tier II Non-Residential						
CONSTITUENT <small>(Units in mg/kg)</small>	SITE	08GP007	08GP007	08GP008	08GP008	08GP008
	SAMPLE ID	08PS00712	08QD00712	08PS00804	08PS00812	08PS00816
	DATE	1996 VRP	10/09/96	10/09/96	10/14/96	10/14/96
	DEPTH (ft)	Tier II	12.00	12.00	4.00	12.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Naphthalene	10000	<0.25	<0.25	<0.05	<0.05	<0.05
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
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**South Bend, Indiana**

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**South Bend, Indiana**

**ORG 6000**

	SITE	08GP009	08GP009	08GP009	08GP009	08GP009
	SAMPLE ID	08PS00904	08PS00908	08P600912	08QD00912	08QD00912
CONSTITUENT (Units in mg/kg)	DATE	10/21/96	10/21/96	10/21/96	10/21/96	10/21/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Naphthalene		10000	< 0.25	< 0.25	< 0.05#	< 0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent more than one test method, highest result reported.

Final RCL: RMA [REDACTED] California Commission 10000 VRP Sheet Non-Residential

**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
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**South Bend, Indiana**

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South Bend, Indiana						
	SITE	08GP010	08GP010	08GP010	08GP011	08GP011
	SAMPLE ID	08PS01004	08PS01008	08PS01014	08PS01104	08PS01108
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/21/96	10/21/96	10/21/96	10/22/96
	DEPTH (ft)	Tier II	4.00	8.00	14.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene		10000	<0.26 E	<0.26	<0.56	<0.25
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
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**South Bend, Indiana**

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	SITE	08GP011	08GP012	08GP012	08GP012	08GP012
	SAMPLE ID	08PS01112	08PS01204	08PS01206	08PS01208	08PS01212
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/22/96	10/22/96	10/22/96	10/22/96
	DEPTH (ft)	Tier II	12.00	4.00	6.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene		10000	<0.26	<0.26	<0.26	<0.06#
Sum of Concentrations			0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed  
 # = Constituent more than one test method, highest result reported.

**Analytical Summary - PNAs in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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South Bend, Indiana			
CONSTITUENT (Units in mg/kg)	SITE	08SD001	08SD002
	SAMPLE ID	08SD00101	08SD00201
	DEPTH (ft)	Tier II	1.00
	RESULT TYPE	Non-Residential	Primary
Naphthalene	10000	<0.25	<0.06#
Sum of Concentrations	0.00	0.00	

**Analytical Summary - Inorganics in Soils**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	08GP004	08GP004	08GP004
	SAMPLE ID	08PS00408	08PS00412	08PS00418
	DATE	1996 VRP	10/08/96	10/08/96
DEPTH (ft)	Tier II	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary
Arsenic, Total	438	6.4	1.0	0.7
Barium, Total	10000	29	24	5
Cadmium, Total	730.0	<1	<1	7.6
Chromium, Total		<5	6.4	5.6
Copper, Total	1700	5.1	6.9	8.3
Nickel, Total	10000	9.3	5.6	7.3
Selenium, Total	7300	0.53	<0.5	<0.5
Zinc, Total	10000	84	27	60
Sum of Concentrations	133.33	71.70	95.50	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCLINORG

## Analytical Summary - TPH/DROs in Soils

## Area 8 - I-Beam Building Former Stormwater Drainage System

## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
08GP001	10/07/96	8.00	Prim	<10
08GP001	10/07/96	12.00	Prim	<10
08GP001	10/07/96	16.00	Prim	[9300] PI
08GP002	10/08/96	8.00	Prim	[12000] PI
08GP002	10/08/96	12.00	Prim	[6600] PI
08GP002	10/08/96	16.00	Prim	[7100] PI
08GP003	10/08/96	8.00	Prim	<10
08GP003	10/08/96	12.00	Prim	<10
08GP003	10/08/96	14.00	Prim	<10
08GP004	10/08/96	8.00	Prim	<10
08GP004	10/08/96	12.00	Prim	<10
08GP004	10/08/96	16.00	Prim	<10
08GP005	10/09/96	4.00	Prim	210 PI
08GP005	10/09/96	8.00	Prim	<10
08GP005	10/09/96	15.00	Prim	<10
08GP006	10/09/96	8.00	Prim	<10
08GP006	10/09/96	12.00	Prim	<10
08GP006	10/09/96	14.00	Prim	<10
08GP007	10/09/96	8.00	Prim	14
08GP007	10/09/96	12.00	Prim	<10
08GP009	10/21/96	4.00	Prim	84 PI
08GP009	10/21/96	8.00	Prim	1100 PI
08GP010	10/21/96	4.00	Prim	23
08GP010	10/21/96	8.00	Prim	140 PI
08GP010	10/21/96	14.00	Prim	2900 PI
08GP011	10/22/96	4.00	Prim	350 PI
08GP011	10/22/96	8.00	Prim	130 PI
08GP011	10/22/96	12.00	Prim	13
08GP012	10/22/96	4.00	Prim	130 PI
08GP012	10/22/96	6.00	Prim	510 PI
08GP012	10/22/96	12.00	Prim	<10
08SD001	10/24/96	1.00	Prim	30

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

I = Greater than Action Level The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 8 - I-Beam Building Former Stormwater Drainage System  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE	08GP002	08GP003	08GP004	08GP005	08GP006
	SAMPLE ID	1996 VRP	08PW00223	08PW00319	08PW00422	08PW00518
	DATE	Tier II	10/08/96	10/08/96	10/08/96	10/09/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	<10	<2	<10	<2
Ethylbenzene	10220	<5	<5	<5	<5	<5
Xylene (total)	204400	<10	<5	<10	<5	<5
Isopropylbenzene	1.02E+4	<1	<5	<1	<5	<5
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10
Naphthalene	4088	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	7.6	<5	<1	<1	<1
1,3,5-Trimethylbenzene	5.11E+3	3.1	<5	<1	<6	<6
1,1-Dichloroethane	10220	230	94	<5	44	<6
CH 1,2-Dichloroethene	1022	140	<5	<5	<5	<6
1,1,1-Trichloroethane	9198	100	30	<5	72	<5
Trichloroethane	260	<5	20.8	<5	78.8	<6
Chloroethane	9.86E+2	38	...	<10	...	...
Sum of Concentrations		618.70	144.00	0.00	194.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

RC [REDACTED]

[REDACTED]

Criteria Comparison

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consider

**Analytical Summary - VOCs in Groundwater**  
**Area 8 - I-Beam Building Former Stormwater Drainage System**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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CONSTITUENT (Units in:ug/l)	SITE	08GP007	08GP008	08GP009	08GP010	08GP012
	SAMPLE ID	1996 VRP	08PW0071B	08PW00821	08PW00920	08PW01018
	DATE	Tier II	10/09/96	10/14/96	10/21/96	10/22/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	{26}	<2	<10	<2
Ethylbenzene	10220	<6	<6	<6	280	<6
Xylenes (total)	204400	<6	<6	<6	180	<5
Isopropylbenzene	1.02E+4	<6	<6	<6	100	<6
2-Methylnaphthalene	2040.00	<10	<10	13	<50	<10
Naphthalene	4088	<6	<6	14	<25	<5
1,2,4-Trimethylbenzene	5.11E+3	<1	<400	5.1	340	<5
1,3,5-Trimethylbenzene	5.11E+3	<6	<6	<6	29	<5
1,1-Dichloroethane	10220	<6	<6	<6	<26	<6
cis-1,2-Dichloroethane	1022	<6	<6	8.8	<26	<5
1,1,1-Trichloroethane	9198	<6	<6	<6	<25	<5
Trichloroethane	260	<6	<6	<6	<26	<6
Chloroethane	9.86E+2	---	<10	---	---	---
Sum of Concentrations		0.00	25.00	40.90	939.00	0.00

Analytical Summary - VOCs in Groundwater  
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<b>SITE</b>	<b>08GPO12</b>	
<b>CONSTITUENT (Units in ug/l)</b>	<b>SAMPLE ID</b>	<b>1996 VRP</b>
		<b>08QD01219</b>
<b>DATE</b>	<b>Tier II</b>	<b>10/22/96</b>
<b>RESULT TYPE</b>	<b>Non-Residential</b>	<b>Duplicate 1</b>
Vinyl chloride	10	<2
Ethylbenzene	10220	<6
Xylene (total)	204400	<5
Isopropylbenzene	1.02E+4	<5
2-Methylnaphthalene	2040.00	<10
Naphthalene	4068	<5
1,2,4-Trimethylbenzene	5.11E+3	<5
1,3,5-Trimethylbenzene	5.11E+3	<5
1,1-Dichloroethane	10220	<6
cis-1,2-Dichloroethene	1022	<6
1,1,1-Trichloroethane	9198	<5
Trichloroethene	260	<6
Chloroethane	9.86E+2	---
<b>Sum of Concentrations</b>		<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: B

For RCL see page 1

Analytical Summary - VOCs in Soils  
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SITE	05GP028	05GP028	05GP028	05GP028	05GP028
SAMPLE ID	05PS02804	05PS02812	05QD02812	05PS02816	05P602906
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/15/96	10/15/96	10/15/96
	DEPTH (ft)	Tier II	4.00	12.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1
Benzene		4.77	<0.1	<0.1	<0.1
Toluene		1000	<0.25	30	41
Ethyl benzene		1000	<0.25	20	26
Xylene (total)		1000	<0.25	7.3	8.7
Isopropylbenzene		1.0E+03	<0.25	<1.3	6.4
n-Propylbenzene		1.00E+03	<0.25	7.2	7.7
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<1.3	<1.3
1,2,4-Trimethylbenzene		1.00E+03	<0.25	6.4	6.5
Naphthalene		10000	<0.25	<1.3	<1.3
2-Methylnaphthalene		10000	<0.5	<2.6	<2.6
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	70.90	96.30	94.80
					0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ... =Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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SITE	05GP029	05GP028	05GP029	05GP029	05GP029
SAMPLE ID	05PS02910	05PS02912	05QD02912	05QD02912	05PS02915
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/16/96	10/16/96	10/16/96
DEPTH (ft)	Tier II	10.00	12.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Duplicate 2
Benzene	4.77	<0.1	<0.13 INE	<0.05	<0.05
Toluene	1000	<0.25	<0.13 INE	<0.05	<0.05
Ethyl benzene	1000	0.63	<0.13 INE	<0.05	<0.05
Xylenes (total)	1000	1	0.5 JIN	<0.1	<0.05
Isopropylbenzene	1.0E+03	<0.25	<0.13 INE	<0.01	<0.05
n-Propylbenzene	1.00E+03	<0.25	0.34 JIN	<0.01	<0.05
1,3,5-Trimethylbenzene	1.00E+03	0.37	0.56 JIN	0.1	0.21 J
1,2,4-Trimethylbenzene	1.00E+03	0.77	1.1 JIN	0.21	0.10 J
Naphthalene	10000	<0.25	1.1#	<0.05	<0.05
2-Methylnaphthalene	10000	<0.6	<1.3 INE	<0.6	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.13 INE	<0.05	<0.05
1,1,1-Trichloroethane	1000	<0.1	<0.13 INE	<0.05	<0.05
Tetrachloroethene	8.01	<0.1	<0.13 INE	<0.05	<0.05
Trichloroethene	25.73	<0.1	<0.13 INE	<0.05	<0.05
Sum of Concentrations	2.77	3.69	0.31	0.31	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

For RCL VOC

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SITE	05GP031	05GP031	05GP031	05GP031	05GP048
SAMPLE ID	05PS03108	05PS03112	05QD03112	05PS03116	05PS04804
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/16/96	10/16/96	10/16/96
DEPTH (ft)	Tier II	8.00	12.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
Benzene		4.77	<0.1	<0.1	<0.1
Toluene		1000	<7.8	30 *	6.5
Ethyl benzene		1000	14	40 *	10
Xylene (total)		1000	80	310 *	83
Isopropylbenzene		1.0E+03	<7.8	42 *	12
n-Propylbenzene		1.00E+03	<7.8	12 *	<5.2
1,3,5-Trimethylbenzene		1.00E+03	60	81 *	28
1,2,4-Trimethylbenzene		1.00E+03	120	280 *	88
Naphthalene		10000	20	30 *	9.7
2-Methylnaphthalene		10000	19	<21 *	<10
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1
Sum of Concentrations		319.00	826.00	234.20	68.60
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

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CONSTITUENT	SITE	06GP048	05GP048	05GP048	05GP063	05GP064
		SAMPLE ID	05PS04B08	05PS04B11	05PS04B14	05PS06404
DATE	1996 VRP	11/11/96	11/11/96	11/11/96	11/15/96	11/16/96
DEPTH (ft)	Tier II	8.00	11.00	14.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.21	<0.05	<45	<0.05
Toluene		1000	1.1	0.17	[1200]	0.097
Ethyl benzene		1000	0.77 J	0.15	600	0.16
Xylene (total)		1000	2.6 J	0.6	[2600]	0.58
Isopropylbenzene		1.0E+03	<0.53	<0.01	150	<0.05
n-Propylbenzene		1.00E+03	<0.63	<0.01	<110	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.63	0.14	580	0.86
1,2,4-Trimethylbenzene		1.00E+3	<0.63	0.14	870	0.24
Naphthalene		10000	<0.53	<0.05#	<110	<0.33#
2-Methylnaphthalene		10000	<1.1	<0.1	<220	<0.33#
cis-1,2-Dichloroethane		102.49	<0.21	0.1	[190]	<0.05
1,1,1-Trichloroethane		1000	<0.21	<0.05	<45	<0.05
Tetrachloroethene		8.01	<0.21	<0.05	<45	<0.05
Trichloroethene		25.73	<0.21	<0.05	<45	<0.05
Sum of Concentrations		4.37	1.30	6090.00	1.92	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported. [ ] = Greater than detection level

For RCL VOC

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SITE	05GP064	06GP064	06GP064	05GP064	05GP064	09GP001
SAMPLE ID	05PS06408	05PS06412	06PS06416	06QD06416	09P60104	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/16/96	11/16/96	11/16/96	11/16/96
	DEPTH (ft)	Tier II	8.00	12.00	16.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
Benzene		4.77	<0.05	<0.1	<0.1	<0.1
Toluene		1000	<0.05	<0.25	<0.25	<0.25
Ethyl benzene		1000	0.19	<0.25	<0.25	<0.25
Xylene (total)		1000	0.26	<0.26	0.29	<0.25
Isopropylbenzene		1.0E+03	<0.05	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.05	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	0.11	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.05	<0.25	<0.25	<0.25
Naphthalene		10000	<0.33#	<0.25	<0.25	<0.25
2-Methylnaphthalene		10000	<0.33#	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene		102.49	<0.05	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.05	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.05	<0.1	<0.1	<0.1
Trichloroethane		25.73	<0.05	<0.1	<0.1	<0.1
Sum of Concentrations			0.66	0.00	0.29	0.00
Values represent total concentrations unless noted   < =Not detected at indicated reporting limit   --- = Not analyzed						
# = Constituent in more than one test method, highest result reported.						
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential					

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SITE	09GP001	09GP001	09GP002	09GP002	09GP002	09GP002
SAMPLE ID	09PS00108	09PS00118	09PS00204	09PS00208	09PS00212	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/15/96	11/15/96	11/17/96	11/17/96
DEPTH (ft)	TIER II	8.00	18.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene		4.77	<0.1	<0.1	<0.05	<0.1
Toluene		1000	<0.25	<0.25	<0.05	<0.25
Ethyl benzene		1000	<0.25	7.8	<0.05	<0.25
Xylene (total)		1000	<0.25	7.5	<0.05	<0.25
Isopropylbenzene		1.0E+03	<0.25	6.7	<0.05	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.05	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	6.9	<0.05	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	4.5	<0.05	<0.25
Naphthalene		10000	<0.25	0.26	<0.05	<0.25
2-Methylnaphthalene		10000	<0.5	0.54	<0.1	<0.5
cis-1,2-Dichloroethane		102.48	<0.1	<0.1	<0.05	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.05	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.05	0.1
Trichloroethene		25.73	<0.1	<0.1	<0.05	<0.1
Sum of Concentrations		0.00	34.19	0.00	0.10	0.94

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
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CONSTITUENT (Units: ln. mg/kg)	SITE	09GP002	09GP003	09GP003	09GP003	09GP003
	SAMPLE ID	09PS00218	09PS00304	09PS00308	14PS00312	14QD00312
	DATE	1996 VRP	11/17/96	07/16/97	07/16/97	07/16/97
DEPTH (ft)	Tier II	18.00	4.00	8.00	12.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Benzene		4.77	<0.1	<0.05	<0.05	<0.05
Toluene		1000	<0.25	<0.05	<0.05	<0.05
Ethyl benzene		1000	<0.25	<0.05	<0.05	<0.05
Xylene (total)		1000	<0.25	<0.05	<0.05	<0.05 UJ
Isopropylbenzene		1.0E+03	<0.25	<0.05	<0.05	<0.05
n-Propylbenzene		1.00E+03	<0.25	<0.05	<0.05	<0.05 UJ
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.05	<0.05	<0.05 J
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.05	<0.05	<0.05 J
Naphthalene		10000	<0.25	<0.05	<0.05	<0.05
2-Methylnaphthalene		10000	<0.5	<0.1	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	<0.1	<0.05	<0.05	<0.05
1,1,1-Trichloroethane		1000	<0.1	<0.05	<0.05	<0.05
Tetrachloroethene		8.01	<0.1	<0.05	<0.05	<0.05
Trichloroethylene		25.73	<0.1	<0.05	<0.05	<0.05
Sum of Concentrations		0.00	0.00	0.00	0.11	0.45

Values represent total concentrations unless noted    <= Not detected at indicated reporting limit    --- Not analyzed

For RCL VOC

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

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CONSTITUENT (Units in mg/kg)	SITE	09GP003	09GP004	09GP004	09GP004	09GP004
	SAMPLE ID	09PS00318	09PS00404	09PS00408	09PS00416	09QD00416
	DATE	1996 VRP	07/16/97	07/16/97	07/16/97	07/16/97
DEPTH (ft)	Tier II	16.00	4.00	8.00	16.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Benzene	4.77	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	1000	26	<0.05	<0.05	<0.05	<0.05
Ethyl benzene	1000	20	<0.05	<0.05	<0.05	<0.05
Xylene (total)	1000	100	<0.05	<0.05	<0.05	<0.05
Isopropylbenzene	1.0E+03	14	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	1.00E+03	9.7	<0.05	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene	1.00E+03	2.5	<0.05	<0.05	<0.05	<0.05
Naphthalene	10000	3.2	<0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene	10000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	8.01	1.6	0.11	0.78	0.24	0.37
Trichloroethene	25.73	2.5	<0.05	0.67	0.26	0.35
<b>Sum of Concentrations</b>		<b>179.40</b>	<b>0.11</b>	<b>1.35</b>	<b>0.49</b>	<b>0.72</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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Criteria Comparison - 1996 VRP-Tier II Non-Residential

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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CONSTITUENT (Units in mg/kg)	SITE	09GP006	09GP006	09GP006	09GP007	09GP007
	SAMPLE ID	09PS00610	09PS00618	09QD00618	09PS00704	09PS00708
DATE	1996 VRP	07/17/97	07/17/97	07/17/97	07/17/97	07/17/97
DEPTH (ft)	Tier II	10.00	18.00	18.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Primary
Benzene		4.77	<0.05	<0.05	<0.05	<0.05
Toluene		1000	<0.05	<0.05	<0.05	<0.05
Ethyl benzene		1000	<0.05	<0.05	<0.05	<0.05
Xylyne (total)		1000	<0.05	<0.05	<0.05	<0.05
Isopropylbenzene		1.0E+03	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene		1.00E+03	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene		1.00E+03	<0.05	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene		1.00E+03	<0.05	<0.05	<0.05	<0.05
Naphthalene		10000	<0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene		10000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane		1000	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene		8.01	<0.05	<0.05	<0.05	<0.05
Trichloroethene		25.73	<0.05	<0.05	<0.05	<0.05
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
Plant 3 - Former Plating and Anodizing Operations  
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South Bend, Indiana

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South Bend, Indiana						
CONSTITUENT (Units in mg/kg)	SITE	09GP007	09GP007	09GP008	09GP008	09GP008
	SAMPLE ID	09PS00712	09PS00717	09PS00808	09PS00812	09PS00816
	DEPTH (ft)	Tier II	12.00	17.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Benzene	4.77	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Ethyl benzene	1000	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene (total)	1000	<0.05	<0.05	<0.05	0.89	<0.05
Isopropylbenzene	1.0E+03	<0.05	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.05
1, 3, 5-Trimethylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.05
1, 2, 4-Trimethylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	10000	<0.05	<0.05	<0.06	<0.05	<0.05
2-Methylnaphthalene	10000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.48	<0.05	<0.05	<0.05	0.1	0.30
1,1,1-Trichloroethane	1000	<0.05	0.61	<0.05	0.31	0.39
Tetrachloroethene	8.01	<0.05	<0.05	<0.05	0.15	0.16
Trichloroethene	26.73	<0.05	<0.05	0.92	3.3	5.5
Sum of Concentrations		0.00	0.51	0.92	4.56	6.35

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - VOCs in Soils  
 Plant 3 - Former Plating and Anodizing Operations  
 Voluntary Site Investigation  
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CONSTITUENT	(Units in mg/kg)	SITE	09HA001	09HA001	09HA001	17GP001	17GP001
		SAMPLE ID	09HA00104	01HA00107	09HA00109	17PS00104	17PS00108
		DATE	1996 VRP	07/25/97	07/25/97	07/25/97	11/12/98
		DEPTH (ft)	Tier II	4.00	7.00	9.00	4.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Benzene			4.77	< 0.10	< 0.06	< 0.10	< 0.1
Toluene			1000	< 0.25	< 0.05	< 0.25	< 0.25
Ethyl benzene			1000	< 0.10	< 0.05	< 0.25	< 0.25
Xylene (total)			1000	< 2.50	< 0.05	< 0.25	< 0.25
Isopropylbenzene			1.0E+03	< 0.10	< 0.05	< 0.25	< 0.25
n-Propylbenzene			1.00E+03	< 0.25	< 0.05	< 0.25	< 0.01
1,3,5-Trimethylbenzene			1.00E+03	< 0.25	< 0.05	< 0.25	< 0.25
1,2,4-Trimethylbenzene			1.00E+03	< 0.25	< 0.05	< 0.25	< 0.01
Naphthalene			10000	< 0.25	< 0.05	< 0.25	< 0.25
2-Methylnaphthalene			10000	< 0.5	< 0.1	< 0.5	< 0.6
cis-1,2-Dichloroethene			102.49	< 0.10	0.27	2.7	< 0.1
1,1,1-Trichloroethane			1000	< 0.25	< 0.05	1.1	< 0.1
Tetrachloroethene			8.01	< 0.10	< 0.05	0.23	< 0.1
Trichloroethene			26.73	0.14	0.17	1.3	< 0.1
Sum of Concentrations				0.14	0.44	5.33	0.00
Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed							
# = Constituent in more than one test method, highest result reported.							
For RCL VOCs							
Criteria Comparison 1996 VRP Tier II Non-Residential							

Analytical Summary - VOCs in Soils  
 Plant 3 - Former Plating and Anodizing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/12/96	11/12/96
		DEPTH (ft)	Tier II	12.00	18.00
		RESULT TYPE	Non-Residential	Primary	Primary
Benzene	4.77		<0.1	1801	
Toluene	1000		<0.25	700	
Ethyl benzene	1000		<0.25	280	
Xylenes (total)	1000		<0.25	720	
Isopropylbenzene	1.0E+03		<0.25	<29	
n-Propylbenzene	1.00E+03		<0.25	<29	
1,3,5-Trimethylbenzene	1.00E+03		<0.25	<29	
1,2,4-Trimethylbenzene	1.00E+3		<0.25	<29	
Naphthalene	10000		<0.25	<29	
2-Methylnaphthalene	10000		<0.5	<58	
cis-1,2-Dichloroethane	102.49		<0.1	<12	
1,1,1-Trichloroethane	1000		<0.1	<12	
Tetrachloroethane	8.01		<0.1	<12	
Trichloroethene	25.73		<0.1	<12	
Sum of Concentrations			0.00	1780.00	

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

! = Greater than Action Level The following qualifier(s) exist: U, J, I, N, E.

For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - TPH/DROs in Soils  
 Plant 3 - Former Plating and Anodizing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRP Tier II Non-Residential				6000
05GP027	10/15/96	4.00	Prim	94
05GP027	10/15/96	8.00	Prim	<10
05GP027	10/15/96	8.00	Dup 1	<10
05GP027	10/15/96	16.00	Prim	480 PI
05GP030	10/16/96	8.00	Prim	190 PI
05GP030	10/16/96	12.00	Prim	22
05GP030	10/16/96	16.00	Prim	410 PI
05GP032	10/16/96	8.00	Prim	<10
05GP032	10/16/96	12.00	Prim	980 PI
05GP032	10/16/96	12.00	Dup 1	890
05GP032	10/16/96	16.00	Prim	430 PI
05GP033	10/16/96	8.00	Prim	65
05GP033	10/16/96	12.00	Prim	1900 PI
05GP033	10/16/96	16.00	Prim	330 PI
05GP048	11/11/96	4.00	Prim	1100 PI
05GP048	11/11/96	8.00	Prim	730 PI
05GP048	11/11/96	14.00	Prim	4300 PI
05GP063	11/15/96	4.00	Prim	<10
05GP063	11/15/96	8.00	Prim	<10
05GP063	11/15/96	16.00	Prim	<10
05GP064	11/16/96	4.00	Prim	<10
05GP064	11/16/96	12.00	Prim	<10
05GP064	11/16/96	16.00	Prim	<10
05GP064	11/16/96	16.00	Dup 1	<10
17GP001	11/12/96	4.00	Prim	<10
17GP001	11/12/96	12.00	Prim	<10
17GP001	11/12/96	18.00	Prim	[8100] PI

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Plant 3 - Former Plating and Anodizing Operations**  
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**South Bend, Indiana**

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Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed  
? = Duplicate records found. Data review required.

For RCLINORG

FOR YOUR INFORMATION

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Soils  
 Plant 3 - Former Plating and Anodizing Operations

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Voluntary Site Investigation

AlliedSignal Industrial Complex

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CONSTITUENT	(Units in mg/kg)	SITE	09GP002	09GP002	17GP001	17GP001	17GP001
		SAMPLE ID	09PS00212	09PS00210	17PS00104	17PS00108	17PS00112
DATE		DEPTH (ft)	1996 VRP	11/17/96	11/17/96	11/12/96	11/12/96
		RESULT TYPE	Tier II	12.00	16.00	4.00	6.00
			Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total			438	0.83	0.63	1.7	4.6
Boron, Total			10000	5.9	7.3	18	22
Cadmium, Total			730.0	<1	<1	<1	<1
Chromium, Total				<5	<5	7	<5
Copper, Total			1700	3.7	3.6	4.6	4.8
Lead, Total			400	<5	<5	6.1	<5
Nickel, Total			10000	2.9	2.8	4.8	6.7
Silver, Total			7300	<1	<1	<1	<1
Zinc, Total			10000	12	9	12	12
Sum of Concentrations				25.33	23.13	51.10	60.10
							22.64

\*Values represent total concentrations unless noted    <=Not detected at indicated reporting limit    =Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils Plant 3 - Former Plating and Anodizing Operations

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#### **AlliedSignal Industrial Complex**

South Bend, Indiana

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Groundwater**  
**Plant 3 - Former Plating and Anodizing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	05GP046	05GP063	05GP002	09GP004	09GP006
	SAMPLE ID	1996 VRP	05PW04821	05PW06320	09PW00421	09PW00521
	DATE	Tier II	11/11/96	11/15/96	11/17/96	07/18/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2000	<200	<200	[850]	[47]
Benzene	98.6	<5000	[1600]	[6500]	<500	[930]
Ethylbenzene	10220	<5000	2900	<500	<500	<50
Toluene	20440	<5000	2400	<500	<500	<50
Xylene (total)	204400	<5000	8700	<500	<500	<50
Isopropylbenzene	1.02E+4	<5000	<500	<500	<500	<50
Naphthalene	4088	<5000	<500	<500	<500	<50
1,2,4-Trimethylbenzene	5.11E+3	<5000	1500	<500	<500	<50
1,3,5-Trimethylbenzene	5.11E+3	<5000	<500	<500	<500	<50
1,1-Dichloroethane	10220	<5000	<500	<500	<500	<50
cis-1,2-Dichloroethene	1022	[88000]	<500	<500	[4200]	<50
1,1,1-Trichloroethane	9198	<5000	<500	<500	<500	<50
Trichloroethene	280	[113000]	<500	<500	[6100]	<50
Sum of Concentrations		101000.00	17100.00	36600.00	11150.00	977.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

II = Greater than Action Level

For RCL VOLT

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater**  
**Plant 3 - Former Plating and Anodizing Operations**  
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**Analytical Summary - Inorganics in Groundwater  
Plant 3 - Former Plating and Anodizing Operations**

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CONSTITUENT	SITE	09GP002	17GP001	MW-8
	SAMPLE ID	1996 VRP	17PW00120	
	DATE	Tier II	11/17/96	11/12/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary
Cyanide	2044	ND	ND	
Arsenic, Dissolved (Filtered)	50	17	21	12
Barium, Dissolved (Filtered)	7154	650	430	160
Lead, Dissolved (Filtered)	1.50E+1	<1	4.1	12
Nickel, Dissolved (Filtered)	2040	16	<10	<10
Sum of Concentrations		682.00	455.10	184.00

Analytical Summary - PNAs in Soils  
 Area 10 - Barrel Storage Building  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	05GP039	10GP001	10GP002		
SAMPLE ID	05PS03912	10PS00108			
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/17/96	11/14/96	11/15/96
	DEPTH (ft)	Tier II	12.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Fluoranthene	10000	0.67	<0.33	<0.33	
Pyrene	10000	0.59	<0.33	<0.33	
Sum of Concentrations		1.26	0.00	0.00	
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential				

## Analytical Summary - TPH/DROs in Soils

Area 10 - Barrel Storage Building

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
<b>1996 VRPTier II Non-Residential</b>				<b>6000</b>
05GP039	10/17/96	4.00	Prim	<10
05GP039	10/17/96	16.00	Prim	12
10GP001	11/14/96	4.00	Prim	16
10GP001	11/14/96	12.00	Prim	<10
10GP001	11/14/96	17.00	Prim	<10
10GP002	11/15/96	4.00	Prim	<10
10GP002	11/15/96	8.00	Prim	<10
10GP002	11/15/96	16.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit ... = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater  
Area 10 - Barrel Storage Building  
Voluntary Site Investigation  
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South Bend, Indiana			
CONSTITUENT (Units in ug/l)	SITE	SAMPLE ID	1996 VRP
		DATE	Tier II
		RESULT TYPE	Non-Residential Primary
cis-1,2-Dichloroethene	1022	16	
Trichloroethane	280	75	
<b>Sum of Concentrations</b>		<b>91.00</b>	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

## Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils**  
**Area 12 - Former Chrome Anodizing Operations**  
**Voluntary Site Investigation**  
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**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	05GP054	05GP054	05GP054	05GP054	05GP055
	SAMPLE ID	05PS05404	05PS05408	05PS05412	05PS05414	05PS05504
	DATE	1996 VRP	11/13/96	11/13/96	11/13/96	11/13/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	14.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene	1000	<0.25	<0.05	35	210 J	<0.05
Xylene (total)	1000	<0.25	<0.1	<2.8	59 J	<0.1
Isopropylbenzene	1.0E+03	<0.25	<0.01	6.3	220 J	<0.01
n-Propylbenzene	1.00E+03	<0.25	<0.01	<2.8	120 J	<0.01
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.01	2.0	<5.7	<0.01
1,2,4-Trimethylbenzenes	1.00E+03	<0.25	<0.01	<2.8	30 J	<0.01
Trichloroethene	26.73	<0.1	<0.05	<1.1	<2.3	<0.05
Sum of Concentrations		0.00	0.00	43.20	839.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

Egr RCL VOC

**Citaria Comparison 1996 VRF Year II Non-Residential**

Analytical Summary - VOCs in Soils  
Area 12 - Former Chrome Anodizing Operations  
Voluntary Site Investigation  
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**South Bend, Indiana**

South Bend, Indiana							
CONSTITUENT (Units in mg/kg)	SITE	05GP055	05GP055	06GP003	12GP001	12GP001	
	SAMPLE ID	05PS05508	05PS05512	06PS00308	12PS00104	12PS00106	
	DATE	1996 VRP	11/13/96	11/13/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II	8.00	12.00	8.00	4.00	8.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Ethyl benzene		1000	<0.26	<0.26	<0.06	<0.26	<0.26
Xylene (Total)		1000	<0.26	<0.26	<0.1	<0.26	<0.26
Isopropylbenzene		1.0E+03	<0.26	<0.26	<0.01	<0.26	<0.26
-Propylbenzene		1.00E+03	<0.26	<0.26	<0.01	<0.26	<0.26
1,3,5-Trimethylbenzene		1.00E+03	<0.26	<0.26	<0.01	<0.26	<0.26
1,2,4 Trimethylbenzene		1.00E+03	<0.26	<0.26	<0.01	<0.26	<0.26
Trichlorethene		25.73	<0.1	<0.1	<0.05	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

## Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils  
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SOUTH DIXIE, FLORIDA							
	SITE	12GP001	12GP002	12GP003	12GP004	12GP005	12GP006
	SAMPLE ID	12PS00116	12PS00208	12PS00210	12PS00214	12PS00219	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/12/96	11/14/96	11/14/96	11/14/96	11/14/96
	DEPTH (ft)	Tier II	16.00	8.00	10.00	14.00	19.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Ethyl benzene		1000	<0.06	<0.06	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.1	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.01	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.01	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.01	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.01	<0.01	<0.25	<0.25	<0.25
Trichloroethene		25.73	0.12	<0.06	<0.1	<0.1	<0.1
Sum-of-Concentrations:			0.12	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCI-VOS

[Guitarra Comparativa VR](#) | [II Notas](#) | [Consideraciones](#)

**Analytical Summary - VOCs in Soils**  
**Area 12 - Former Chrome Anodizing Operations**  
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South Bend, Indiana					
CONSTITUENT	SITE	12GP003	12GP003	12GP003	
	SAMPLE ID	12PS00304	12PS00310	12PS00314	
	DATE	1996 VRP	11/14/96	11/14/96	11/14/96
DEPTH (ft)	Tier II	4.00	10.00	14.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	
Ethyl benzene	1000	<0.25	<0.25	<0.25	
Xylyne (fetal)	1000	<0.25	<0.25	<0.25	
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	
Trichloroethene	25.73	<0.1	<0.1	<0.1	
Sum of Concentrations		0.00	0.00	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: J

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - TPH/DROs in Soils**  
**Area 12 - Former Chrome Anodizing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
05GP054	11/13/96	4.00	Prim	130 Pt
05GP054	11/13/96	12.00	Prim	490 Pt
05GP054	11/13/96	14.00	Prim	4040 Pt
05GP055	11/13/96	8.00	Prim	12
05GP055	11/13/96	12.00	Prim	12
06GP003	11/12/96	4.00	Prim	<10
06GP003	11/12/96	12.00	Prim	<10
06GP005	11/13/96	4.00	Prim	42
06GP005	11/13/96	12.00	Prim	<10
06GPC05	11/13/96	16.00	Prim	<10
06GP005	11/13/96	16.00	Dup 1	<10

Values represent total concentrations unless noted    <= Not detected at indicated reporting limit    ... = Not analyzed

The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils  
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AlliedSignal Industrial Complex

#### **South Bend, Indiana**

050P055 050

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	05GP055	05GP056	05GP055	12GP001	12GP001
	SAMPLE ID	05PS05504	05PS05506	05PS05512	12PS00104	12P500106
	DATE	1996 VRP	11/13/96	11/13/96	11/13/96	11/12/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	3.8	0.92	1.7	6.8	4.3
Barium, Total	10000	9.4	6.9	7.5	32	29
Chromium, Total		5.4	<5	<5	12	6.4
Copper, Total	1700	6.8	6.4	4.6	6	8.3
Lead, Total	400	<5	<5	5	7.2	<5
Nickel, Total	10000	6.8	5.3	3.3	5.8	8.4
Silver, Total	7300	<1	<1	<1	1.4	1.3
Zinc, Total	10000	18	13	13	18	23
Sum of Concentrations		49.20	30.52	36.10	89.00	80.70

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Area 12 - Former Chrome Anodizing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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AlliedSignal Industrial Complex

## South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	12GP001	12GP002	12GP002	12GP002	12GP002	
	SAMPLE ID	12PS00116	12PS00208	12PS00210	12PS00214	12PS00219	
	DATE	1996 VRP	11/12/96	11/14/96	11/14/96	11/14/96	
DEPTH (ft)	Tier II	16.00	8.00	10.00	14.00	19.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	
Arsenic, Total		438	1.1	1	0.63	1	2.3
Barium, Total		10000	8.1	11	7.9	7.5	71
Chromium, Total		<5	<5	<5	<5	<5	15
Copper, Total		1700	9.4	7.0	25	15	19
Lead, Total		400	<5	<6	<5	<5	7.8
Nickel, Total		10000	5.2	8.4	4.8	5.4	19
Silver, Total		7300	<1	<1	<1	<1	1.6
Zinc, Total		10000	15	14	15	18	37
Sum of Concentrations		38.80	38.80	53.03	46.90	172.60	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL MORE

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils  
Area 12 - Former Chrome Anodizing Operations**

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## **Voluntary Site Investigation**

#### AlliedSignal Industrial Complex

## South Bend, Indiana

	SITE	12GP003	12GP003	12GP003		
	SAMPLE ID	12PS00304	12PS00310	12PS00314		
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/14/96	11/14/96	11/14/96
		DEPTH (ft)	Tier II	4.00	10.00	14.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary
Arsenic, Total		438	32	1.3	1	
Barium, Total		10000	33	4.3	6.3	
Chromium, Total			16	<6	<6	
Copper, Total		1700	8.9	3.4	4.1	
Lead, Total		400	10	<6	<6	
Nickel, Total		10000	5.3	3.5	3.3	
Silver, Total		7300	1	<1	<1	
Zinc, Total		10000	28	10	12	
Sum of Concentrations		134.20	22.60	26.70		

**Values represent total concentrations unless noted**    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCL INORG

## Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater  
Area 12 - Former Chrome Anodizing Operations**

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CONSTITUENT -CONSTITUENT	SITE	05GP054	05GP055	06GP003	06GP005	12GP001
	SAMPLE ID	1996 VRP	05PW05421	05PW05518	06PW00320	06PW00521
	DATE	Tier II	11/13/96	11/13/98	11/12/98	11/13/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
1,2,4-Trimethylbenzene	5.11E + 3	19	< 5	< 1	< 1	< 1
1,1-Dichloroethene	10220	< 5	< 5	< 5	< 5	13
cis-1,2-Dichloroethene	1022	< 5	< 5	180	20	130
1,1,1-Trichloroethane	9198	< 5	< 5	< 5	< 5	93
Trichloroethene	260	< 5	< 5	81 J	21	160
Sum of Concentrations		19.00	0.00	271.00	41.00	386.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following modifier(s) exist: J

For RCL VOC1

**Analytical Summary - Inorganics in Groundwater  
Area 12 - Former Chrome Anodizing Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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South Bend, Indiana			
CONSTITUENT (Units in ug/l)	SITE	12GP001	
	SAMPLE ID	1996 VRP	12PW00121
	DATE	Tier II	11/12/96
	RESULT TYPE	Non-Residential	Primary
Arsenic, Dissolved (Filtered)	50	1.4	
Barium, Dissolved (Filtered)	7.154	99	
<b>Sum of Concentrations</b>		<b>100.40</b>	

**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Electroplating Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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AlliedSignal Industrial Complex

**South Bend, Indiana**

SOUTHERN BOUNDARY, WADSWELL						
CONSTITUENT (Units in mg/kg)	SITE	05GP014	05GP070	05GP070	05GP070	05GP070
	SAMPLE ID	05PS01408	05PS07004	05PS07008	05PS07012	05PS07016
	DATE	1996 VRP	10/08/96	12/09/96	12/09/96	12/09/96
DEPTH (ft)	Tier II	8.00	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	<0.05	<0.1	0.14	0.12
Trichloroethene		25.73	<0.05	0.42	0.66	0.41
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.42	0.79	0.53	0.34

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed



Analytical Summary - VOCs in Soils  
 Plant 1 - Former Electroplating Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	05GP071	05GP071	05GP071	13GP001	13GP001
SAMPLE ID	05PS07108	05PS07112	05PS07116	13PS00104	13PS00108
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	12/09/96	12/09/96	10/23/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1
Trichloroethene		25.73	0.26	0.23	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1
Sum of Concentrations			0.26	0.29	0.00
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed					
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - VOCs In Soils  
Plant 1 - Former Electroplating Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Groundwater Sampling Results						
	SITE	13GP001	13GP002	13GP002	13GP002	13GP003
	SAMPLE ID	13PS00118	13PS00206	13PS00210	13PS00215	13PS00322
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/23/96	10/24/96	10/24/96	11/01/96
	DEPTH (ft)	Tier II	16.00	6.00	10.00	15.00
	RESULT-TYPE	Non-Residential	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.1	<0.1	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations			0.00	0.00	0.00	0.77

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCL VDC

Editorial Comparison 1996 VRR Tier II Non-Presidential

**Analytical Summary - VOCs in Soils  
Plant 1 - Former Electroplating Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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South Bond, Thailand						
CONSTITUENT (Units in mg/kg)	SITE	13GP003	13GP003	13GP004	13GP004	13GP004
	SAMPLE ID	13PS00326	13PS00330	13PS00422	13PS00428	13PS00434
	DEPTH (ft)	Tier II	26.00	30.00	22.00	28.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethylene	25.73	0.84	<0.1	0.44	0.34	<0.1
Vinyl chloride	0.13	0.11	<0.1	0.12	<0.1	0.11
Sum of Concentrations		0.95	0.00	0.56	0.34	0.11

**Analytical Summary - VOCs in Soils  
Plant 1 - Former Electroplating Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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	SITE	13GP005	13GP006	13GP005	13GP006	13GP006
	SAMPLE ID	13PS00522	13PS00526	13PS00532	13PS00604	13P600608
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/03/96	11/03/96	11/03/96	11/15/96
	DEPTH (ft)	Tier II	22.00	28.00	34.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	1.3
Trichloroethylene		26.73	0.12	0.91	0.26	2.6
Vinyl chloride		0.13	[0.16]	0.11	<0.1	<0.1
Sum of Concentrations:			0.27	1.02	0.26	3.90
						0.82

**Saturated soil sample;  
collected below water table.**

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

| = Greater than Action Level

For RCL VOC

**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Electroplating Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	13GP006	13GP006	13GP006	13GP006	13GP007
	SAMPLE ID	13PS00612	13PS00616	13PS00628	13PS00638	13PS00704
	DATE	1996 VRP	11/15/96	11/15/96	11/15/96	12/09/96
DEPTH (ft)	Tier II	12.00	16.00	28.00	38.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane		1000	0.16	<0.1	<0.1	<0.1
Trichloroethene		25.73	0.54	0.26	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.70	0.26	0.00	0.00	0.00

**Analytical Summary - VOCs in Soils  
Plant 1 - Former Electroplating Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT	(Units in mg/kg)	SITE	T3GP007	13GP007	13GP007
		SAMPLE ID	13P500706	13P500712	13P500716
		DATE	1996 VRP	12/09/96	12/09/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	
1,1,1-Trichloroethane	1000	< 0.1	< 0.1	< 0.05	
Trichloroethene	26.73	< 0.1	< 0.1	< 0.05	
Vinyl chloride	0.13	< 0.1	< 0.1	< 0.1	
Sum of Concentrations		0.00	0.00	0.00	

Values represent total concentrations unless noted  
≤ = Not detected at indicated reporting limit      --- = Not analyzed

For RCL yes

Criterea Comparison 1996 VRP Tier II Non-Resident

**Analytical Summary - Inorganics in Soils  
Plant 1 - Former Electropolating Operations  
Voluntary Site Investigation  
Allied Signal Industrial Complex  
South Bend, Indiana**

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Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

For RCL INORG

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Soils  
Plant 1 - Former Electroplating Operations  
Voluntary Site Investigation  
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Plant 1 - Former Electroplating Operations**  
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**Analytical Summary - Inorganics in Soils**  
**Plant 1 - Former Electroplating Operations**  
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**South Bend, Indiana**

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South Bend, Indiana							
	SITE	13GP006	13GP006	13GP006	13GP006	13GP006	13GP006
	SAMPLE ID	13PS00604	13PS00608	13PS00612	13PS00616	13PS00620	
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/16/96	11/16/96	11/16/96	11/16/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00	28.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	3.2	2.1	0.74	0.44	1.2
Barium, Total		10000	203	6.5	3.9	2.5	3.9
Cadmium, Total		730.0	9.4	4.1	12	21	<1
Chromium, Total			286.	18	16	<5	<5
Copper, Total		1700	78	34	16	130	4.6
Lead, Total		400	[564]	38	<5	<5	<5
Mercury, Total		87.60	1.3	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	5.9	7.6	17	19	12
Silver, Total		7300	2.07	<1	<1	<1	<1
Zinc, Total		10000	4107	72	92	130	24
Cyanide, total		10000	13				
Sum of Concentrations			1586.80	182.30	167.64	302.84	45.60

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

? = Duplicate words found, Data review required. || = Greater than Action Level

For RCL WORKS

Analytical Summary - Inorganics in Soils  
 Plant 1 - Former Electroplating Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	13GP006	13GP007	13GP007	13GP007	13GP007
SAMPLE ID	13PS00638	13PS00704	13PS00708	13PS00712	13PS00716
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/15/96	12/09/96	12/09/96
DEPTH (ft)	Tier II	38.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total	438	2.9	3.3	1	0.52
Barium, Total	10000	26	36	4.6	3.5
Cadmium, Total	730.0	<1	<1	<1	<1
Chromium, Total		7.4	6.8	13	14
Copper, Total	1700	13	11	5.3	3
Lead, Total	400	<5	320	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	12	6.4	5.9	3.3
Silver, Total	7300	1.2	<1	<1	<1
Zinc, Total	10000	26	34	13	7.2
Cyanide, total	10000	---	---	---	1.7
<b>Sum of Concentrations</b>		<b>88.60</b>	<b>416.50</b>	<b>42.80</b>	<b>31.82</b>
					<b>108.38</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
The following qualifier(s) exist: J					
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - VOCs in Groundwater**  
**Plant 1 - Former Electroplating Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	05GP071	13GP001	13GP003	13GP004	13GP004
	SAMPLE ID	1996 VRP	05PW07119	13PW00119	13PW00319	13PW00419
	DATE	Tier II	12/09/96	10/23/96	11/01/96	11/01/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Vinyl chloride	10	[23]	<10	<250	<10	<10
Xylene (tethyl)	204400	12.8	<10	<250	<10	<10
1,2,4 Trimethylbenzene	6.11E+3	5.4	<1	<26	<1	<1
1,1-Dichloroethane	10220	<5	<5	1300	32.1	29
1,1-Dichlorethane	7	<5	<6	[180]	<5	<5
cis-1,2-Dichloroethane	1022	4.9	<5	380	<5	<5
trans-1,2-Dichloroethane	2040	7.9	<5	<130	<5	<5
1,1,1-Trichloroethane	9198	<5	<5	2700	<5	<5
Trichloroethene	260	210	<5	[2100]	<5	<5
Chloroethane	9.86E+2	---	<10	<250	330 J	300
<b>Sum of Concentrations</b>		<b>301.30</b>	<b>0.00</b>	<b>6680.00</b>	<b>362.00</b>	<b>328.00</b>

Values represent total concentrations unless noted      <=Not detected at indicated reporting limit      ---=Not analyzed

[ ] = Greater than or equal to the Selection Level

For BCL VOC1

## Analytical Summary - VOCs in Groundwater

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#### **Plant 1 - Former Electroplating Operations**

Date: 09/29/99

## **Voluntary Site Investigation**

## AlliedSignal Industrial Complex

## South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	13GP006	13GP006	13GP006
	SAMPLE ID	1996 VRP	13PW00520	13PW00620
	DATE	Tier II	11/03/96	11/15/96
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1
Vinyl chloride	10	<100	<2	<2
Xylenes (total)	204400	<100	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<10	<5	<5
1,1-Dichloroethane	10220	<50	[190] J	<5
1,1-Dichloroethene	7	<50	<5	<5
cis-1,2-Dichloroethene	1022	<50	[150] J	<5
trans-1,2-Dichloroethane	2040	<50	<5	<5
1,1,1-Trichloroethane	9198	<50	[250]	290
Trichloroethene	260	[1960] J	[11500]	[1600]
Chloroethane	9.86E+2	<100	<10	<10
<b>Sum of Concentrations</b>	<b>960.00</b>	<b>2090.00</b>	<b>1890.00</b>	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level The following qualifier(s) exist: B, J

For RCL VOC1

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - Inorganics in Groundwater

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Plant 1 - Former Electroplating Operations

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AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	13GP001	13GP003	13GP004	13GP004	13GP006
	SAMPLE ID	1996 VRP	13PW00119	13PW00319	13PW00419	13QD00419
	DATE	Tier II	10/23/96	11/01/96	11/01/96	11/03/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Cyanide	2044	---	8	80	70	<5
Arsenic, Dissolved (Filtered)	50	<1	<1	27	27	<1
Barium, Dissolved (Filtered)	7154	56	78	160	170	88
Cadmium, Dissolved (Filtered)	51.1	<0.2	<0.2	<0.2	<0.2	8.8
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2 UJ	0.2	<0.2
Nickel, Dissolved (Filtered)	2040	<10	<10	18	18	<10
Selenium, Dissolved (Filtered)	511	<2	<2	<2	<2	3.9
Zinc, Dissolved (Filtered)	30660	<20	<20	<20	<20	240
Sum of Concentrations		56.00	87.00	285.00	285.20	348.70

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Conc in Concentration 1996 VRP Tier II Non Residential

**Analytical Summary - Inorganics in Groundwater**  
**Plant 1 - Former Electroplating Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana			
CONSTITUENT [Units in µg/l]	SITE	13GP006	
	SAMPLE ID:	1996 VRP	13PW00620
	DATE	Tier II	11/15/96
RESULT TYPE	Non-Residential	Primary	
Cyanide	2044	[5200f PI]	
Arsenic, Dissolved (Filtered)	50	2.5	
Barium, Dissolved (Filtered)	7154	32	
Cadmium, Dissolved (Filtered)	61.1	<0.2	
Mercury, Dissolved (Filtered)	6.1	<0.2	
Nickel, Dissolved (Filtered)	2040	570	
Selenium, Dissolved (Filtered)	611	<2	
Zinc, Dissolved (Filtered)	30660	640	
Sum of Concentrations	6444.50		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**[I] = Greater than Action Level** The following qualifier(s) exist: U, J, P, I

For RCL INORG

## Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Plant 1 - Electroplating Operations

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
<b>1996 VRP Tier II Non-Residential</b>				<b>6000</b>
05GP014	10/07/96	4.00	Prim	<10
05GP014	10/07/96	8.00	Prim	[9300] Quench Oil Tank - 10,000 mg/kg criteria
05GP014	10/07/96	14.00	Prim	<10
05GP071	12/09/96	8.00	Prim	<10
06GP071	12/09/96	12.00	Prim	<10
05GP071	12/09/96	16.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	05GP072	05GP072	05GP072	14GP001	14GP001
	SAMPLE ID	05PS07204	05PS07208	05PS07212	14PS00108	14PS00112
	DATE	1996 VRP	12/12/96	12/12/96	12/12/96	10/24/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25
Ethyl benzene		1000	<0.25	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzenes		1.00E+3	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04	---	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	<0.1	<0.1	<0.1	0.2
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethylene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		26.73	<0.1	<0.1	<0.1	2.5
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	2.70	0.83
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed						
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential					

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CONSTITUENT	SITE	14GP001	14GP002	14QP002	14GP002	14GP002	
		SAMPLE ID	14PS00114	14PS00208	14QD00208	14PS00212	14QD00212
CONSTITUENT (Units in mg/kg)	DATE	1998 VRP	10/24/98	10/24/98	10/24/98	10/24/98	
	DEPTH (ft)	Tier II	14.00	8.00	8.00	12.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Duplicate 1
Toluene		1000	<0.25	<0.25	<1	<0.13	<0.13
Ethyl benzene		1000	<0.25	<0.25	<1	<0.13	<0.13
Xylene (total)		1000	<0.25	<0.25	<1	<0.26	<0.26
Isopropylbenzene		1.0E+03	<0.25	<0.25	<1	<0.026	<0.026
n-Propylbenzene		1.00E+03	<0.25	<0.25	<1	<0.026	<0.026
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<1	<0.026	<0.026
1,2,4-Trimethylbenzene		1.00E+3	<0.25	<0.25	<1	<0.026	<0.026
Naphthalene		10000	<0.26	<0.26	<1	<0.13#	<0.13
Acenaphthene		1.0E+04	---	---	---	<0.33	---
2-Methylnaphthalene		10000	<0.5	<0.5	<2.1	<0.26	<0.26
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.13	<0.13
cis-1,2-Dichloroethane		102.49	<0.1	<0.1	<0.1	<0.13	<0.13
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.13	<0.13
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.13	<0.13
Trichloroethene		25.73	0.32	8.1 J	24	8.4	6.4
Vinyl chloride		0.13	<0.1	<0.1	<0.41	<0.26	<0.26
Sum of Concentrations			0.32	8.10	24.00	8.40	6.40

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported.

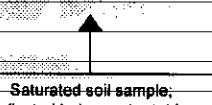
For RCL VOC

Calcareous Comparison 1998 VRP Tier II Non-Residential

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CONSTITUENT	(Units in mg/kg)	SITE	14GP002	14GP002	14GP002	14GP002	14GP003
		SAMPLE ID	14PS00216	14PS00220	14PS00225	14PS00231	14PS00304
		DATE	1996 VRP	10/24/96	11/01/96	11/01/96	11/01/96
DEPTH (ft)	RESULT TYPE	Tier II	16.00	20.00	25.00	31.00	4.00
		Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene		1000	< 2.6	< 0.25	< 0.25	< 0.05	< 1.4
Ethylbenzene		1000	< 2.6	< 0.25	< 0.25	< 0.05	< 1.4
Xylene (total)		1000	< 2.6	< 0.25	< 0.25	< 0.1	< 1.4
Isopropylbenzene		1.0E+03	< 2.6	< 0.25	< 0.25	< 0.01	< 1.4
n-Propylbenzene		1.00E+03	< 2.6	< 0.25	< 0.25	< 0.01	< 1.4
1,3,5-Trimethylbenzene		1.00E+03	< 2.6	< 0.25	< 0.25	< 0.01	< 1.4
1,2,4-Trimethylbenzene		1.00E + 3	< 2.6	< 0.25	< 0.25	< 0.01	< 1.4
Naphthalene		10000	< 2.6	< 0.25	< 0.25	< 0.05#	< 1.4
Acenaphthene		1.0E + 04	...	...	...	< 0.33	...
2-Methylnaphthalene		10000	< 5.2	< 0.5	< 0.5	< 0.1	< 2.7
1,1-Dichloroethane		1000	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1
1,1,2-Dichloroethane		102.49	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1
1,1,1-Trichloroethane		1000	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1
Tetrachloroethene		8.01	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1
Trichloroethene		25.73	[37]	6.6	0.41	0.084 J	[40]
Vinyl chloride		0.13	< 1	< 0.1	< 0.1	< 0.1	< 0.55
Sum of Concentrations		37.00		5.60	0.41	0.08	40.00
 <b>Saturated soil sample; collected below water table.</b>							
<small>Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit ... = Not analyzed</small>							
<small># = Constituent in more than one test method, highest result reported.   = Greater than Action Level</small>							
For RCL VOC		Criteria Comparison 1996 VRP Tier II Non-Residential					

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CONSTITUENT	SITE	14GP003	14GP003	14GP004	14GP004	14GP004
	SAMPLE ID	14PS00308	14PS00316	14PS00404	14PS00408	14PS00416
	(Units in mg/kg)	DATE	1996 VRP	10/25/96	10/25/96	10/29/96
	DEPTH (ft)	Tier II	8.00	16.00	4.00	8.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	0.15	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	6.4	1.6	<0.1	<0.1	0.19
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		6.40	1.76	0.00	0.00	0.19

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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South Bend, Indiana							
CONSTITUENT # (Units in mg/kg)	SITE	14GP005	14GP005	14GP005	14GP005	14GP005	14GP005
	SAMPLE ID	14PS00504	14PS00508	14PS00512	14CD00612	14PS00516	
	DATE	1996 VRP	10/29/96	10/29/96	10/29/96	10/29/96	10/29/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00	16.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary	
Toluene		1000	<0.25	<0.05	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.05	<0.25	<0.25	<0.25
Xylena (total)		1000	<0.25	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.054	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04		<0.33			
2-Methylnaphthalene		10000	<0.5	<0.1	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.05	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.05	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.05	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.06	<0.1	<0.1	<0.1
Trichloroethene		26.73	<0.1	0.098	<0.1 UJ	0.25	0.23
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.10</b>	<b>0.00</b>	<b>0.25</b>	<b>0.23</b>	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

| For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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South Bend, Indiana						
SITE	14GP006	14GP006	14GP006	14GP007	14GP007	14GP007
SAMPLE ID	14PS00604	14PS00610	14PS00618	14PS00704	14PS00710	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/29/96	10/29/96	10/29/96	10/30/96
DEPTH (ft)	Tier II	4.00	10.00	18.00	4.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylenes (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	0.32	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	0.42	0.11	0.19	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations	0.74	0.11	0.19	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For BCL VOC

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Values represent total concentrations unless noted <= Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL VOC

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SITE		14GP008	14GP009	14GP009	14GP009	14GP010
SAMPLE ID		14PS00816	14PS00902	14PS00908	14PS00915	14PS01008
CONSTITUENT	(Units in mg/kg)	DATE	10/30/96	10/30/96	10/30/96	10/30/96
DEPTH (ft)		Tier II	16.00	2.00	8.00	15.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04	...	...	...	...
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	0.71
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		26.73	<0.1	<0.1	<0.1	0.12
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.12	0.71

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

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CONSTITUENT	SITE	14GP010	14GP010	14GP010	14GP011	14GP011	
		SAMPLE ID	14PS01008	14PS01012	14PS01018	14PS01104	14PS01110
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/31/96	10/31/96	10/31/96	10/31/96	
	DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00	10.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene		1000	<0.05	<0.25	<0.25	<0.25	<0.25
Ethyl benzene		1000	<0.05	<0.25	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.05	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.05	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.05	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.05	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+03	<0.05	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.05	<0.25	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04	...	...	...	...	...
2-Methylnaphthalene		10000	0.71	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.05	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.05	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.05	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.05	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	<0.05	<0.1	<0.1	<0.1	<0.1
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations			0.71	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

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CONSTITUENT	SITE	14GP011	14GP012	14GP012	14GP012	14GP012	
		SAMPLE ID	14PS01116	14PS01204	14PS01208	14PS01212	14PS01216
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/31/96	10/31/96	10/31/96	10/31/96	
	DEPTH (ft)	Tier II	16.00	4.00	8.00	12.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene		1000	<0.06	<0.25	<0.13	<0.25	<0.25
Ethyl benzene		1000	<0.06	<0.25	<0.13	<0.25	<0.25
Xylene (total)		1000	<0.1	<0.25	<0.13	<0.25	<0.25
Isopropylbenzene		1.00E+03	<0.01	<0.25	<0.13	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.01	<0.25	<0.13	<0.25	<0.25
1,3,5 Trimethylbenzene		1.00E+03	<0.01	<0.25	<0.13	<0.25	<0.25
1,2,4 Trimethylbenzene		1.00E+3	<0.01	<0.25	<0.13	<0.25	<0.25
Naphthalene		10000	<0.05#	<0.25	<0.13#	<0.25	<0.25
Acenaphthene		1.0E+04	<0.33	—	<0.33	—	—
2-Methylnaphthalene		10000	<0.1	<0.5	<0.3	<0.5	<0.5
1,1-Dichloroethane		1000	<0.05	<0.1	<0.13	<0.1	<0.1
cis-1,2-Dichloroethane		102.49	<0.05	<0.1	<0.13	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.05	<0.1	<0.13	<0.1	<0.1
Tetrachloroethene		8.01	<0.06	<0.1	<0.13	<0.1	<0.1
Trichloroethene		25.73	<0.05	5.6	3.4	8.4	6
Vinyl chloride		0.13	<0.01	<0.1	<0.13	<0.1	<0.1
Sum of Concentrations		0.00	6.50	3.40	8.40	8.00	—

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent found in more than one test method, highest result reported.

CL VOC      [REDACTED]      [REDACTED]

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CONSTITUENT	SITE	14GP012	14GP012	14GP012	14GP012	14GP013
	SAMPLE ID	14PS01218	14PS01222	14PS01226	14PS01230	14PS01304
	DATE	1996 VRP	10/31/96	10/31/96	10/31/96	10/31/96
	DEPTH (ft)	Tier II	18.00	22.00	28.00	30.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene		1000	<0.25	<0.54	<0.26	<120
Ethyl benzene		1000	<0.25	<0.54	<0.26	<120
Xylyne (total)		1000	<0.25	<0.54	<0.26	<120
Isopropylbenzene		1.0E+03	<0.25	<0.54	<0.26	<120
n-Propylbenzene		1.00E+03	<0.25	<0.54	<0.26	<120
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.54	<0.26	<120
1,2,4-Trimethylbenzene		1.00E+3	<0.25	<0.54	<0.26	<120
Naphthalene		10000	<0.25	<0.54	<0.26	<120
Acenaphthene		1.0E+04	---	---	---	---
2-Methylnaphthalene		10000	<0.6	<1.1	<0.6	<230
1,1-Dichloroethane		1000	<0.1	<0.22	<0.1	880
cis-1,2-Dichloroethene		102.49	<0.1	4	<0.1	670
1,1,1-Trichloroethane		1000	<0.1	<0.22	<0.1	1500
Tetrachloroethene		8.01	<0.1	<0.22	<0.1	46
Trichloroethene		25.73	<0.1	23	<0.1	2300
Vinyl chloride		0.13	<0.1	<0.22	<0.1	320
Sum of Concentrations		0.00	24.40	0.00	5570.00	1.80
						
<b>Saturated soil sample; collected below water table</b>						
<small>Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed</small>						
<small>   = Greater than Action Level</small>						
<small>For RCL VOC Criteria Comparison 1996 VRP Tier II Non-Residential</small>						

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SITE	14GP013	14GP013	14GP014	14GP014	14GP014
SAMPLE ID	14PS01312	14PS01318	14PS01404	14PS01410	14PS01415
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/01/96	11/01/96	11/01/96
DEPTH (ft)	RESULT TYPE	Tier II	12.00	15.00	8.00
		Non-Residential	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.25	<0.25
Xylene (total)		1000	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E+3	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25
Aceanaphthalene		1.0E+04	---	---	---
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1
Trichloroethene		25.73	7.7	4.3	5.4
Vinyl chloride		0.13	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>		<b>7.70</b>	<b>4.30</b>	<b>5.40</b>	<b>1.30</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOCs

Conc in Concentration 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE	14GP015	14GP015	14GP015	14GP016	14GP016
	SAMPLE ID	14PS01504	14PS01512	14PS01515	14PS01604	14PS01610
	DATE	1996 VRP	11/01/96	11/01/96	11/03/96	11/03/96
	DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.54	<0.26	<0.26	<0.26	<0.26
Ethylbenzene	1000	<0.54	<0.26	<0.26	<0.26	<0.26
Xylenes (total)	1000	<0.54	<0.26	<0.26	<0.26	<0.26
Isopropylbenzene	1.0E+03	<0.64	<0.26	<0.26	<0.26	<0.26
n-Propylbenzene	1.00E+03	<0.54	<0.26	<0.26	<0.26	<0.26
1,3,5-Trimethylbenzene	1.00E+03	<0.54	<0.26	<0.26	<0.26	<0.26
1,2,4-Trimethylbenzene	1.00E+03	<0.54	<0.26	<0.26	<0.26	<0.26
Naphthalene	10000	<0.54	<0.26	<0.26	<0.26	<0.26
Acenaphthene	1.0E+04	...	...	...	...	...
2-Methylnaphthalene	10000	<1.1	<0.6	<0.6	<0.6	<0.6
1,1-Dichloroethane	1000	<0.22	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.48	<0.22	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.22	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.22	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	13	12	6.8	0.48	0.88
Vinyl chloride	0.13	<0.22	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		13.00	12.00	5.80	0.48	0.88
<hr/>						
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential					

## Analytical Summary - VOCs in Soils

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Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

[ ] = Greater than or equal to  
Section Level

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	SITE	14GP017	14GP018	14GP018	14GP018	14GP019
CONSTITUENT	SAMPLE ID	14QD01715	14PS01804	14PS01810	14PS01815	14PS01906
(Units in mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96	11/06/96
	DEPTH (ft)	Tier II	16.00	4.00	10.00	16.00
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary
Toluene		1000	<0.25	0.87	<0.25	<0.25
Ethyl benzene		1000	<0.25	<0.25	<0.25	<0.25
Xylyne (total)		1000	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene		1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzenes		1.00E+3	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Acenaphthene		1.0E+04				
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		25.73	0.26	1.5	0.14	0.72
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations			0.26	2.37	0.14	0.72
						0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential					

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SITE	14GP019	14GP019	14GP020	14GP020	14GP020
SAMPLE ID	14PS01911	14PS01916	14PS02004	14PS02010	14PS02015
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/06/96	11/06/96	11/06/96
DEPTH (ft)	TIER II	11.00	15.00	6.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	...	...	...	...
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.48	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene	26.73	<0.1	<0.1	0.31	0.46
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations	0.00	0.00	0.31	0.46	0.28

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Conc. Concentration 1996 VRP Tier Non Residential

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CONSTITUENT (Units in mg/kg)	SITE	14GP021	14GP021	14GP021	14GP022	14GP022
	SAMPLE ID	14PS02104	14PS02108	14PS02112	14PS02204	14PS02212
	DATE	1996 VRP	12/09/96	12/09/96	12/09/96	12/12/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.05	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.05	<0.25	<0.25	<0.25
Xylena (total)	1000	<0.25	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.01	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.33# PI	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	...	23# PI	...	...	...
2-Methylnaphthalene	10000	<0.5	<0.33#	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.05	<0.1	<0.1	<0.1
cis-1,2-Dichloroethane	102.49	0.12	0.16	0.14	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.05	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.05	<0.1	<0.1	<0.1
Trichloroethene	26.73	0.65	0.68	0.61	<0.1	0.15
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.67	23.84	0.65	0.00	0.16

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
 # = Constituent in more than one test method, highest result reported.

For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential
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## **South Bend, Indiana**

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL vpc

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CONSTITUENT (Units in mg/kg)	SITE	14GP025	14GP025	14GP025	14GP025	14GP025
	SAMPLE ID	14PS02504	14QD02504	14PS02508	14QD02508	14PS02512
	DATE	1996 VRP	12/13/96	12/13/96	12/13/96	12/13/96
	DEPTH (ft)	Tier II	4.00	4.00	8.00	9.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Duplicate 1	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCL VOC

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

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CONSTITUENT (Units in mg/kg)	SITE	14GP026	14GP026	14GP026	14GP027	14GP027
	SAMPLE ID	14PS02604	14PS02608	14PS02614	14PS02704	14PS02708
	DATE	1996 VRP	12/12/96	12/12/96	12/12/96	12/12/96
DEPTH (ft)	Tier II	4.00	8.00	16.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.26	<0.26	<0.26	<0.26
Ethyl benzene	1000	<0.25	<0.26	0.32	<0.26	<0.26
Xylene (total)	1000	<0.26	<0.26	0.76	<0.26	<0.26
Isopropylbenzene	1.0E + 03	<0.25	<0.26	1.7	<0.26	<0.26
n-Propylbenzene	1.00E + 03	<0.25	<0.26	0.29	<0.26	<0.26
1,3,5-Trimethylbenzene	1.00E + 03	<0.25	<0.26	0.67	<0.26	<0.26
1,2,4-Trimethylbenzene	1.00E + 03	<0.25	<0.25	1.6	<0.26	<0.26
Naphthalene	10000	<0.26	<0.26	1.2	<0.26	<0.26
Acenaphthene	1.0E + 04	...	...	...	...	...
2-Methylnaphthalene	10000	<0.5	<0.5	1.8	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	0.55	0.66	<0.1	1	3.6
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.65	0.65	8.24	1.00	3.60

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

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CONSTITUENT	Units in mg/kg	SITE	14GP027	14GP028	14GP028	14GP028	14GP028
		SAMPLE ID	14PS02712	14PS02804	14PS02808	14PS02814	14PS02904
		DATE	1996 VRP	12/12/96	12/12/96	12/12/96	12/12/96
DEPTH (ft)	Tier II	12.00	4.00	8.00	14.00	4.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
Ethylbenzene	1000	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
Xylena (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
Isopropylbenzene	1.0E+03	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
n-Propylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05
Acenaphthene	1.0E+04	---	---	---	---	---	---
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
cis-1,2-Dichloroethane	102.49	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
Tetrachloroethylene	8.01	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05
Trichloroethene	25.73	1.4	0.48	0.52	0.69	<0.05	<0.05
Vinylchloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>		<b>1.40</b>	<b>0.48</b>	<b>0.52</b>	<b>0.69</b>	<b>0.00</b>	
<hr/>							
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
For RCL VOC				Criteria Comparison 1996 VRP Tier II Non-Residential			

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CONSTITUENT (Units in mg/kg)	SITE	14GP029	14GP029	14GP029	14GP030	14GP030	
	SAMPLE ID	14PS02910	14PD02910	14PS02918	14P603004	14PS03008	
	DATE	1996 VRP	07/16/97	07/15/97	07/15/97	07/15/97	07/15/97
DEPTH (ft)	Tier II	10.00	10.00	16.00	4.00	8.00	
RESULT TYPE	Non-Residential	Primary	Duplicate	Primary	Primary	Primary	
Toluene		1000	<0.05	<0.05	<0.05	<0.05	<0.05
Ethyl benzene		1000	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene (total)		1000	<0.05	<0.05	<0.05	<0.06	<0.06
Isopropylbenzene		1.0E+03	<0.05	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene		1.00E+03	<0.05	<0.05	<0.05	<0.06	<0.06
1, 3, 5-Trimethylbenzene		1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.05
1, 2, 4-Trimethylbenzenes		1.00E+3	<0.05	<0.05	<0.05	<0.06	<0.06
Naphthalene		10000	<0.05	<0.05	<0.05	<0.06	<0.06
Acenaphthene		1.0E+04	...	...	...	...	...
2-Methylnaphthalene		10000	<0.1	<0.1	<0.1	<0.1	<0.1
1, 1-Dichloroethane		1000	<0.05	<0.05	<0.05	<0.06	<0.06
cis-1, 2-Dichloroethene		102.49	<0.06	<0.05	<0.05	<0.06	<0.06
1, 1, 1-Trichloroethane		1000	<0.05	<0.05	<0.05	<0.06	<0.06
Tetrachloroethene		8.01	<0.05	<0.05	<0.05	<0.06	<0.06
Trichloroethene		26.73	<0.05	<0.05	0.19	<0.06	<0.06
Vinyl chloride		0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.19	0.00	0.00

**Values represent total concentrations unless noted** < = Not detected at indicated reporting limit ... = Not analyzed

FoxBCL VOC

## Analytical Summary - VOCs in Soils

#### **Plant 1 - Former Painting and Degreasing Operations**

## **Voluntary Site Investigation**

### **AlliedSignal Industrial Complex**

South Bend, Indiana

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CONSTITUENT <small>(Units in mg/kg)</small>	SITE	14GP030	14GP031	14GP031	14GP031	14GP031
	SAMPLE ID	14PS03015	14PS03104	14PS03108	14PS03112	14PS03116
	DATE	1996 VRP	07/15/97	07/15/97	07/15/97	07/15/97
	DEPTH (ft)	Tier II	15.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.05	<0.05	<0.05	<0.05	0.28
Ethyl benzene	1000	<0.05	<0.05	<0.05	<0.05	0.61
Xylenes (total)	1000	<0.05	<0.05	<0.05	<0.05	2.0
Isopropylbenzene	1.0E+03	<0.05	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	1.00E+03	<0.05	0.077	<0.05	<0.05	<0.05
1,2,4-Trimethylbenzene	1.00E+3	---	0.19	<0.05	<0.05	<0.05
Naphthalene	10000	<0.05	<0.05	0.28	<0.05	1.4
Acenaphthene	1.0E+04	<0.05	---	---	---	---
2-Methylnaphthalene	10000	<0.05	<0.1	0.69	<0.1	4.1
1,1-Dichloroethene	1000	<0.05	<0.05	<0.05	<0.05	0.10
cis-1,2-Dichloroethene	102.49	<0.05	<0.05	<0.05	<0.05	0.15
1,1,1-Trichloroethane	1000	<0.05	0.066	<0.05	0.10	1.3
Tetrachloroethene	8.01	<0.05	<0.05	0.12	<0.05	0.51
Trichloroethane	25.73	<0.05	<0.05	<0.05	0.11	0.62
Vinyl chloride	0.13	<0.05	<0.1	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.33</b>	<b>1.09</b>	<b>0.21</b>	<b>10.97</b>

**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	14GP032	14GP032	14GP032	14GP032	16GP010
	SAMPLE ID	14PS03204	14PS03208	14PS03212	14P603216	16PS01004
	DATE	1996 VRP	07/15/97	07/15/97	07/15/97	11/06/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.05	<0.05	<0.05	<0.05	<0.25
Ethyl benzene	1000	<0.05	<0.05	<0.05	<0.05	<0.25
Xylene (total)	1000	<0.05	<0.05	<0.05	<0.05	<0.25
Isopropylbenzene	1.0E+03	<0.05	<0.05	<0.05	<0.05	<0.25
n-Propylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.05	<0.05	<0.05	<0.05	<0.25
Naphthalene	10000	<0.05	<0.05	<0.05	<0.05	<0.25
Acenaphthene	1.0E+04	---	---	---	---	---
2-Methylnaphthalene	10000	<0.1	<0.1	<0.1	<0.1	<0.5
1,1-Dichloroethane	1000	<0.05	<0.05	<0.05	<0.05	<0.1
cis-1,2-Dichloroethane	102.49	<0.05	<0.05	<0.05	<0.05	<0.1
1,1,1-Trichloroethane	1000	<0.05	<0.05	<0.05	<0.05	<0.1
Tetrachloroethene	8.01	<0.05	<0.05	<0.05	<0.05	<0.1
Trichloroethene	25.73	<0.05	<0.05	<0.05	<0.05	0.16
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.16

**Values represent total concentrations unless noted**      < = Not detected at indicated reporting limit      --- = Not analyzed

Analytical Summary - VOCs in Soils  
Plant 1 - Former Painting and Degreasing Operations

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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
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CONSTITUENT (Units in mg/kg)	SITE	15GP010	15GP010	15GP010	15GP010
	SAMPLE ID	15PS01008	15PS01012	16PS01015	15QD01015
	DATE	1996 VRP	11/06/96	11/06/96	11/06/96
	DEPTH (ft)	Tier II	8.00	12.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Toluene	1000	<0.05	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.05	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.1	<0.25	<0.25	<0.25
Isopropylbenzene	1.0E+03	<0.01	<0.25	<0.25	<0.25
n-Propylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.01	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzenes	1.00E+3	<0.01	<0.25	<0.25	<0.25
Naphthalene	10000	<0.05#	<0.25	<0.25	<0.25
Acenaphthene	1.0E+04	<0.33	...	...	...
2-Methylnaphthalene	10000	<0.1	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.05	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.05	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.05	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.05	<0.1	<0.1	<0.1
Trichloroethene	26.73	0.19	0.24	0.39	0.29
Vinyl chloride	0.13	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.19	0.24	0.39	0.29
<hr/>					
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
# = Constituent in more than one test method, highest result reported. The following qualifier(s) exist: J, U, P, I					
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
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Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

For PCL/PMA Only. Compensation 17000 RP Total Non-Residential

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
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South Bend, Indiana						
	SITE	14GP001	14GP002	14GP002	14GP002	14GP002
CONSTITUENT	SAMPLE ID	14PS00114	14PS00208	14Q000208	14PS00212	14QD00212
	DATE	1996 VRP	10/24/96	10/24/96	10/24/96	10/24/96
	DEPTH (ft)	Tier II	14.00	8.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
						Duplicate 1
Acenaphthene		1.0E + 04	---	---	---	< 0.33
Anthracene		1.00E + 04	---	---	---	< 0.33
Benzo (a) anthracene		103.8	---	---	---	< 0.33
Benzo (b) pyrene		69.85	---	---	---	< 0.33
Benzo (b) fluoranthene		354.98	---	---	---	< 0.33
Benzo (ghi) perylene		---	---	---	---	< 0.33
Benzo (k) fluoranthene		3769.12	---	---	---	< 0.33
Chrysene		1.00E + 04	---	---	---	< 0.33
Dibenzo (a,h) anthracene		69.86	---	---	---	< 0.33
Fluoranthene		10000	---	---	---	< 0.33
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	< 0.33
Naphthalene		10000	< 0.25	< 0.25	< 1	< 0.13#
Phenanthrene		1.00E + 04	---	---	---	< 0.33
Pyrene		10000	---	---	---	< 0.33
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Analytical Summary - PNAs in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	14GP002	14GP002	14GP002	14GP002	14GP003
SAMPLE ID	14PS00218	14PS00220	14PS00225	14PS00231	14PS00304
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/24/96	11/01/96	11/01/96
DEPTH (ft)	RESULT TYPE	Tier II	16.00	20.00	25.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Acenaphthene		1.0E +04	---	---	<0.33
Anthracene		1.00E +04	---	---	<0.33
Benz (a) anthracene		103.8	---	---	<0.33
Benz (b) pyrene		69.85	---	---	<0.33
Benz (b) fluoranthene		354.98	---	---	<0.33
Benz (ghi) perylene		---	---	---	<0.33
Benz (k) fluoranthene		3759.12	---	---	<0.33
Chrysene		1.00E +04	---	---	<0.33
Dibenz (a,h) anthracene		69.86	---	---	<0.33
Fluoranthene		10000	---	---	<0.33
Indeno (1,2,3-cd) pyrene		629.17	---	---	<0.33
Naphthalene		10000	<2.6	<0.25	<0.05#
Phenanthrene		1.00E +04	---	---	<0.33
Pyrene		10000	0.00	---	<0.33
Sum of Concentrations			0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported.

For BCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
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CONSTITUENT (Units: n.mg/kg)	SITE	14GP003	14GP003	14GP004	14GP004	14GP004
	SAMPLE ID	14PS00308	14PS00316	14PS00404	14PS00408	14PS00416
	DATE	1996 VRP	10/25/96	10/25/96	10/29/96	10/29/96
DEPTH (ft)	Tier II	8.00	16.00	4.00	8.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E + 04				
Anthracene		1.00E + 04				
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		364.98	---	---	---	---
Benzo (ghi)perylene			---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E + 04	---	---	---	---
Dibeno (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E + 04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Analytical Summary - PNAs in Soils  
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CONSTITUENT	SITE	14GP005	14GP005	14GP005	14GP005	14GP005
	SAMPLE ID	14PS00504	14PS00508	14PS00512	14QD00512	14PS00516
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/29/96	10/29/96	10/29/96	10/29/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary
Acenaphthene		1.0E + 04	---	< 0.33	---	---
Anthracene		1.00E + 04	---	< 0.33	---	---
Benzo (a) anthracene		103.8	---	< 0.33	---	---
Benzo (b) pyrene		69.85	---	< 0.33	---	---
Benzo (b) fluoranthene		354.98	---	< 0.33	---	---
Benzo (ghi) perylene			---	< 0.33	---	---
Benzo (k) fluoranthene		3759.12	---	< 0.33	---	---
Chrysene		1.00E + 04	---	< 0.33	---	---
Dibenz (a,h) anthracene		69.86	---	< 0.33	---	---
Fluoranthene		10000	---	< 0.33	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	< 0.33	---	---
Naphthalene		10000	< 0.25	< 0.05#	< 0.25	< 0.25
Phenanthrene		1.00E + 04	---	< 0.33	---	---
Pyrene		10000	---	< 0.33	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed  
 # = Constituent found in more than one test method, highest result reported.

For PCL PNA [REDACTED] Catalyst Comparison 1996 VRP Tier II Non-Residential [REDACTED]

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
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	SITE	14GP006	14GP006	14GP006	14GP007	14GP007
	SAMPLE ID	14PS00604	14PS00610	14PS00616	14P600704	14P600710
CONSTITUENT	(Units in mg/kg)	DATE	10/29/96	10/29/96	10/29/96	10/30/96
	DEPTH (ft)	Tier II	4.00	10.00	16.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthalene		1.0E +04	---	---	---	---
Anthracene		1.00E +04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		364.98	---	---	---	---
Benzo (ghi) perylene		1.00E +04	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E +04	---	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E +04	---	---	---	---
Pyrene		10000	---	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted    <=Not detected at indicated reporting limit    ---=Not analyzed

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - PNAs in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
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SITE	14GP007	14GP008	14GP008	14GP008	14GP008
SAMPLE ID	14PS00718	14PS00804	14PS00808	14QD00808	14PS00812
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/30/96	10/30/96	10/30/96
DEPTH (ft)	Tier II	16.00	4.00	8.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Acenaphthene	1.0E+04	---	---	<0.33	<0.33
Anthracene	1.00E+04	---	---	<0.33	<0.33
Benzo (a) anthracene	103.8	---	---	<0.33	<0.33
Benzo (b) pyrene	69.85	---	---	<0.33	<0.33
Benzo (b) fluoranthene	354.98	---	---	<0.33	<0.33
Benzo (ghi) perylene		---	---	<0.33	<0.33
Benzo (k) fluoranthene	3759.12	---	---	<0.33	<0.33
Chrysene	1.00E+04	---	---	<0.33	<0.33
Dibenzo (a,h) anthracene	69.86	---	---	<0.33	<0.33
Fluoranthene	10000	---	---	<0.33	<0.33
Indeno (1,2,3-cd) pyrene	629.17	---	---	<0.33	<0.33
Naphthalene	10000	<0.25	<0.25	<0.05#	<0.33
Phenanthrene	1.00E+04	---	---	<0.33	<0.33
Pyrene	10000	---	---	<0.33	<0.33
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
 # = Constituent more than one test method, highest result reported.

For RCL PNA

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
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Plant 1 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex

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CONSTITUENT	(Units in mg/kg)	SITE	14GP010	14GP010	14GP010	14GP011	14GP011
		SAMPLE ID	14PS01008	14PS01012	14PS01016	14PS01104	14PS01110
DATE	1998 VRP	DEPTH (ft)	8.00	12.00	16.00	4.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Acenaphthene	1.0E +04	---	---	---	---	---	---
Anthracene	1.00E +04	---	---	---	---	---	---
Benz (a) anthracene	103.8	---	---	---	---	---	---
Benz (b) pyrene	69.85	---	---	---	---	---	---
Benz (b) fluoranthene	354.98	---	---	---	---	---	---
Benz (ghi) perylene	---	---	---	---	---	---	---
Benz (k) fluoranthene	3759.12	---	---	---	---	---	---
Chrysene	1.00E +04	---	---	---	---	---	---
Dibenz (a,h) anthracene	69.86	---	---	---	---	---	---
Fluoranthene	10000	---	---	---	---	---	---
Indeno (1,2,3-cd) pyrene	629.17	---	---	---	---	---	---
Naphthalene	10000	<0.05	<0.25	<0.25	<0.25	<0.25	<0.25
Phenanthrene	1.00E +04	---	---	---	---	---	---
Pyrene	10000	---	---	---	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

QC: C1, Concentration 1, RP T, Non-Residential

## Analytical Summary - PNAs in Soils

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### Plant 1 - Former Painting and Degreasing Operations

## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

**South Bend, Indiana**

SITE	14GP011	14GP012	14GP012	14GP012	14GP012
SAMPLE ID	14PS01116	14PS01204	14PS01208	14PS01212	14PS01216
CONSTITUENT (Units in mg/kg)	DATE	10/31/96	10/31/96	10/31/96	10/31/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
					Primary
Acenaphthalene		1.0E+04	<0.33	---	<0.33
Anthracene		1.00E+04	<0.33	---	<0.33
Benz (a) anthracene		103.8	<0.33	---	<0.33
Benz (b) pyrene		69.85	<0.33	---	<0.33
Benz (b) fluoranthene		354.98	<0.33	---	<0.33
Benz (ghi)perylene			<0.33	---	<0.33
Benz (k) fluoranthene		3755.12	<0.33	---	<0.33
Chrysene		1.00E+04	<0.33	---	<0.33
Dibenzo (a,h) anthracene		69.86	<0.33	---	<0.33
Fluoranthene		10000	<0.33	---	<0.33
Indeno (1,2,3-cd) pyrene		629.17	<0.33	---	<0.33
Naphthalene		10000	<0.05#	<0.25	<0.13#
Phenanthrene		1.00E+04	<0.33	---	<0.33
Pyrene		10000	<0.33	---	<0.33
<b>Sum of Concentrations</b>		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

## Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - PNAs in Soils  
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SITE	14GP012	14GP012	14GP012	14GP012	14GP013
SAMPLE ID	14PS01218	14PS01222	14PS01226	14PS01230	14PS01304
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/31/96	10/31/96	10/31/96
DEPTH (ft)	Tier II	18.00	22.00	26.00	30.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04			
Anthracene		1.00E+04			
Benz (a) anthracene		103.8	---	---	---
Benz (b) pyrene		69.85			
Benz (b) fluoranthene		354.98			
Benz (ghi) perylene					
Benz (k) fluoranthene		3759.12			
Chrysene		1.00E+04			
Dibenzo (a,h) anthracene		69.86			
Fluoranthene		10000	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---
Naphthalene		10000	<0.26	<0.54	<0.26
Phanthrene		1.00E+04	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

Grindia Corporation 1000 VRP Tier Non Residential

Analytical Summary - PNAs in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
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CONSTITUENT (Units in mg/kg)	SITE	14GP013	14GP013	14GP014	14GP014	14GP014
	SAMPLE ID	14PS01312	14PS01315	14PS01404	14PS01410	14PS01415
DATE	1996 VRP	11/01/96	11/01/96	11/01/96	11/01/96	11/01/96
DEPTH (ft)	Tier II	12.00	15.00	8.00	10.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E +04	---	---	---	---
Anthracene		1.00E +04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		384.98	---	---	---	---
Benz (a) anthracene		---	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E +04	---	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E +04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed						
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential					

**Analytical Summary - PNAs in Soils**  
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	SITE	14GP015	14GP015	14GP015	14GP016	14GP016
	SAMPLE ID	14PS01504	14PS01512	14PS01515	14PS01604	14PS01610
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/01/96	11/01/96	11/03/96
	DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.85	---	---	---	---
Benzo (b) fluoranthene		364.98	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	< 0.64	< 0.25	< 0.25	< 0.25
Phenanthrene		1.00E+04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**Analytical Summary - PNAs in Soils**  
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CONSTITUENT (Units in mg/kg)	SITE	14GP016	14GP016	14GP017	14GP017	14GP017
	SAMPLE ID	14PS01615	14QD01615	14PS01704	14PS01710	14PS01716
	DATE	1996 VRP	11/03/96	11/03/96	11/04/96	11/04/96
DEPTH (ft)	Tier II	15.00	15.00	4.00	10.00	15.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Aceanaphthalene	1.0E +04	---	---	---	---	---
Anthracene	1.00E +04					
Benzo (a) anthracene	103.8	---	---	---	---	---
Benzo (b) pyrene	69.85					
Benzo (b) fluoranthene	364.98	---	---	---	---	---
Benzo (ghi) perylene						
Benzo (k) fluoranthene	3759.12	---	---	---	---	---
Chrysene	1.00E +04					
Dibenzo -(a,h)-anthracene	69.86	---	---	---	---	---
Fluoranthene	10000					
Indeno (1,2,3-cd) pyrene	629.17	---	---	---	---	---
Naphthalene	10000	<0.25	<2.6	<0.25	<0.25	<0.25
Phenanthrene	1.00E +04	---	---	---	---	---
Pyrene	10000	---	---	---	---	---
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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SITE	14GP017	14GP018	14GP018	14GP018	14GP019
SAMPLE ID	14QD01715	14PS01804	14PS01810	14PS01815	14PS01906
CONSTITUENT (Units in mg/kg)	DATE	11/04/96	11/04/96	11/04/96	11/04/96
	DEPTH (ft)	15.00	4.00	10.00	15.00
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary
Acenaphthene		1.0E +04	---	---	---
Anthracene		1.00E +04	---	---	---
Benz (a) anthracene		103.8	---	---	---
Benz (b) pyrene		69.85	---	---	---
Benz (b) fluoranthene		354.98	---	---	---
Benz (ghi) perylene		3759.12	---	---	---
Benz (k) fluoranthene		1.00E +04	---	---	---
Chrysene		---	---	---	---
Dibenz (a,h) anthracene		69.86	---	---	---
Fluoranthene		10000	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25
Phenanthrene		1.00E +04	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For PCL PNA					
Conc. Concentration 100% VRP Non-Residential					

Analytical Summary - PNAs in Soils  
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SITE	14GP019	14GP019	14GP020	14GP020	14GP020
SAMPLE ID	14PS01911	14PS01916	14PS02004	14PS02010	14PS02016
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/06/96	11/06/96	11/06/96
DEPTH (ft)	RESULT TYPE	Tier II	11.00	15.00	6.00
		Non-Residential	Primary	Primary	Primary
			Primary	Primary	Primary
Acenaphthene		1.0E+04	---	---	---
Anthracene		1.00E+04	---	---	---
Benz (a) anthracene		103.8	---	---	---
Benz (b) pyrene		69.86	---	---	---
Benz (b) fluoranthene		354.98	---	---	---
Benz (ghi) perylene		3759.12	---	---	---
Benz (k) fluoranthene		1.00E+04	---	---	---
Chrysene		69.86	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---
Fluoranthene		10000	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25
Phenanthrene		1.00E+04	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential				

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South Bend, Indiana						
SITE	14GP021	14GP021	14GP021	14GP022	14GP022	14GP022
SAMPLE ID	14PS02104	14PS02108	14PS02112	14PS02204	14PS02212	
CONSTITUENT (Units in mg/kg)	DATE	12/09/96	12/09/96	12/09/96	12/12/96	12/12/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	4.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene	1.0E+04	---	23# PI	---	---	---
Anthracene	1.00E+04	---	1.2# PI	---	---	---
Benz(a)anthracene	103.8	---	8.2# PI	---	---	---
Benz(b)pyrene	69.85	---	6.9# PI	---	---	---
Benz(b)fluoranthene	354.98	---	6.97# PI	---	---	---
Benz(ghi)perylene		---	9.0# PI	---	---	---
Benz(kl)fluoranthene	3759.12	---	3.47# PI	---	---	---
Chrysene	1.00E+04	---	8.7# PI	---	---	---
Dibenzo(a,h)anthracene	69.86	---	3.5# PI	---	---	---
Fluoranthene	10000	---	31# PI	---	---	---
Indeno(1,2,3-cd)pyrene	629.17	---	5.8# PI	---	---	---
Naphthalene	10000	<0.25	<0.33# PI	<0.25	<0.25	<0.25
Phenanthrene	1.00E+04	---	12# PI	---	---	---
Pyrene	10000	---	19# PI	---	---	---
Sum of Concentrations	0.00	138.60	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent more than one test method, highest result reported. ? = Duplicate record and, Data review required.

For BCL PNA Current Comparison 1995 VRP Tier II Non-Residential

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CONSTITUENT	(Units in mg/kg)	SITE	14GP022	14GP023	14GP023	14GP023	14GP024
		SAMPLE ID	14PS02214	14PS02304	14PS02308	14PS02314	14PS02408
		DATE	1996 VRP	12/12/96	12/12/96	12/12/96	12/12/96
		DEPTH (ft)	Tier II	14.00	4.00	8.00	14.00
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene			1.0E +04	---	---	---	---
Anthracene			1.00E+04	---	---	---	---
Benzo (a) anthracene			103.8	---	---	---	---
Benzo (b) pyrene			69.85	---	---	---	---
Benzo (b) fluoranthene			364.98	---	---	---	---
Benzo (ghi) perylene				---	---	---	---
Benzo (k) fluoranthene			3769.12	---	---	---	---
Chrysene			1.00E+04	---	---	---	---
Dibanzo (a,h) anthracene			69.86	---	---	---	---
Fluorene			10000	---	---	---	---
Indeno (1,2,3-cd) pyrene			629.17	---	---	---	---
Naphthalene			10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene			1.00E+04	---	---	---	---
Pyrene			10000	---	---	---	---
<b>Sum of Concentrations</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
For RCL PNA			Criteria Comparison 1996 VRP Tier II Non-Residential				

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CONSTITUENT (Units in mg/kg)	SITE	14GP025	14GP025	14GP025	14GP025	14GP025
	SAMPLE ID	14PS02504	14QD02504	14PS02508	14QD02508	14PS02512
	DATE	1996 VRP	12/13/96	12/13/96	12/13/96	12/13/96
	DEPTH (ft)	Tier II	4.00	4.00	6.00	8.00
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Duplicate 1
Aceanaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benzo (a) anthracene		103.8	---	---	---	---
Benzo (b) pyrene		69.86	---	---	---	---
Benzo (b) fluoranthene		354.98	---	---	---	---
Benzo (ghi) perylene		---	---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Phenanthrene		1.00E+04	---	---	---	---
Pyrene		10000	---	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

FAN CCL PNA

Concen Concentration 1996 VRP Tier Non Residential

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PNA

## Criteria Comparison 1996 VRP Tier II Non-Residential

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SITE	14GP027	14GP028	14GP028	14GP028	14GP029
SAMPLE ID	14PS02712	14PS02804	14PS02806	14PS02814	14PS02904
CONSTITUENT (Units in mg/kg)	DATE	12/12/96	12/12/96	12/12/96	07/16/97
	DEPTH (ft)	Tier II	4.00	8.00	14.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Acenaphthene		1.0E +04	---	---	---
Anthracene		1.00E +04	---	---	---
Benzo (a) anthracene		103.8	---	---	---
Benzo (b) pyrene		69.85	---	---	---
Benzo (b) fluoranthene		364.98	---	---	---
Benzo (ghi) perylene		---	---	---	---
Benzo (k) fluoranthene		3759.12	---	---	---
Chrysene		1.00E +04	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---
Fluoranthene		10000	---	---	---
Indeno (1,2,3-cd) pyrene		629.17	---	---	---
Naphthalene		10000	<0.25	<0.25	<0.25
Phenanthrene		1.00E +04	---	---	---
Pyrene		10000	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

For PCL PNA

C = Concentration 1000 RP T = Non-Residential

Analytical Summary - PNAs in Soils  
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SITE	14GP029	14GP029	14GP029	14GP030	14GP030
SAMPLE ID	14PS02910	14QD02910	14PS02916	14PS03004	14PS03008
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	07/15/97	07/15/97	07/15/97
DEPTH (ft)	Tier II	10.00	10.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary
Aceanaphthene		1.0E+04			
Anthracene		1.00E+04			
Benzo (a) anthracene		103.8			
Benzo (b) pyrene		69.85			
Benzo (b) fluoranthene		364.98			
Benzo (ghi) perylene					
Benzo (k) fluoranthene		3759.12			
Chrysene		1.00E+04			
Dibenzo (a,h) anthracene		69.86			
Fluoranthene		10000			
Indeno (1,2,3-cd) pyrene		629.17			
Naphthalene		10000	<0.05	<0.05	<0.05
Phenanthrene		1.00E+04			
Pyrene		10000			
Sum of Concentrations		0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential				

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**Plant 1 - Former Painting and Degreasing Operations  
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CONSTITUENT (Units in mg/kg)	SITE	14GP030	14GP031	14GP031	14GP031	14GP031
	SAMPLE ID	14PS03015	14PS03104	14PS03108	14PS03112	14PS03116
	DATE	1996 VRP	07/15/97	07/15/97	07/15/97	07/15/97
DEPTH (ft)	Tier II	15.00	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04	< 0.05	--	--	--
Anthracene		1.00E+04	--	--	--	--
Benz (a) anthracene		103.8	---	---	---	---
Benz (b) pyrene		69.85	---	---	---	---
Benz (b) fluoranthene		354.98	---	---	---	---
Benz (ghi) perylene		--	---	---	---	---
Benz (k) fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Dibenzo (a,h) anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno (1,2,3-cd) pyrene		628.17	---	---	---	---
Naphthalene		10000	< 0.05	< 0.05	0.28	< 0.05
Phenanthrene		1.00E+04	---	---	---	---
Pyrene		10000	---	---	---	---
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>0.00</b>	<b>0.28</b>	<b>0.00</b>	<b>1.40</b>

Values represent total concentrations unless noted    <=Not detected at indicated reporting limit    ---=Not analyzed

**Analytical Summary - PNAs in Soils**  
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South Bend, Indiana						
	SITE	14GP032	14GP032	14GP032	14GP032	14GP010
	SAMPLE ID	14PS03204	14PS03208	14PS03212	14PS03216	15PS01004
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	07/15/97	07/15/97	07/15/97	07/15/97
	DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Acenaphthene		1.0E+04	---	---	---	---
Anthracene		1.00E+04	---	---	---	---
Benz(a)anthracene		103.8	---	---	---	---
Benz(b)pyrene		69.85	---	---	---	---
Benz(b)fluoranthene		354.98	---	---	---	---
Benz(ghi)perylene		---	---	---	---	---
Benz(k)fluoranthene		3759.12	---	---	---	---
Chrysene		1.00E+04	---	---	---	---
Dibenzo(a,h)anthracene		69.86	---	---	---	---
Fluoranthene		10000	---	---	---	---
Indeno(1,2,3-cd)pyrene		629.17	---	---	---	---
Naphthalene		10000	<0.05	<0.05	<0.05	<0.05
Phanthrene		1.00E+04	---	---	---	---
Pyrene		10000	---	---	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - PNAs in Soils  
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CONSTITUENT	SITE	15GP010	15GP010	15GP010	15GP010
		SAMPLE ID	15PS01008	15PS01012	15PS01015
DATE	1996 VRP	11/06/96	11/06/96	11/06/96	11/06/96
DEPTH (ft)	Tier II	8.00	12.00	15.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Acenaphthene		1.0E+04	<0.33	---	---
Anthracene		1.00E+04	<0.33	---	---
Benzo (a) anthracene		103.8	<0.33	---	---
Benzo (b) pyrene		69.86	<0.33	---	---
Benzo (b) fluoranthene		354.98	<0.33	---	---
Benzo (ghi) perylene			<0.33	---	---
Benzo (k) fluoranthene		3759.12	<0.33	---	---
Chrysene		1.00E+04	<0.33	---	---
Dibeno (a,h) anthracene		69.86	<0.33	---	---
Fluoranthene		10000	<0.33	---	---
Indeno (1,2,3-cd) pyrene		629.17	<0.33	---	---
Naphthalene		10000	<0.06#	<0.25	<0.25
Phenanthrene		1.00E+04	<0.33	---	---
Pyrene		10000	<0.33	---	---
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed  
 # = Constituent more than one test method, highest result reported. The following quality codes exist: P, I

For RCL PNA [REDACTED]

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - TPH/DROs in Soils  
Area 14 - Former Painting and Degreasing Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
05GP072	12/12/96	4.00	Prim	<10
05GP072	12/12/96	8.00	Prim	<10
05GP072	12/12/96	12.00	Prim	<10
14GP001	10/24/96	8.00	Prim	3800 PI
14GP001	10/24/96	12.00	Prim	4300 PI
14GP001	10/24/96	14.00	Prim	2800 PI
14GP002	10/24/96	4.00	Prim	250 PI
14GP002	10/24/96	8.00	Prim	17
14GP002	10/24/96	8.00	Dup. 1	11
14GP002	10/24/96	16.00	Prim	<10
14GP003	10/25/96	4.00	Prim	26
14GP003	10/25/96	8.00	Prim	<10
14GP003	10/25/96	16.00	Prim	<10
14GP004	10/29/96	4.00	Prim	<10
14GP004	10/29/96	8.00	Prim	<10
14GP004	10/29/96	16.00	Prim	<10
14GP005	10/29/96	4.00	Prim	<10
14GP005	10/29/96	12.00	Prim	<10
14GP005	10/29/96	16.00	Prim	<10
14GP006	10/29/96	4.00	Prim	3900 PI
14GP006	10/29/96	10.00	Prim	<10
14GP006	10/29/96	16.00	Prim	<10
14GP007	10/30/96	4.00	Prim	<10
14GP007	10/30/96	10.00	Prim	<10
14GP007	10/30/96	16.00	Prim	<10
14GP008	10/30/96	4.00	Prim	<10
14GP008	10/30/96	12.00	Prim	<10
14GP008	10/30/96	16.00	Prim	<10
14GP009	10/30/96	2.00	Prim	<10
14GP009	10/30/96	8.00	Prim	<10
14GP009	10/30/96	15.00	Prim	<10
14GP010	10/31/96	4.00	Prim	2400
14GP010	10/31/96	8.00	Prim	2400 PI

Values represent total concentrations unless noted < = Not detected at indicated reporting limit — = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - TPH/DROs in Soils  
 Area 14 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
14GP010	10/31/96	12.00	Prim	13
14GP010	10/31/96	16.00	Prim	<10
14GP011	10/31/96	4.00	Prim	19
14GP011	10/31/96	10.00	Prim	<10
14GP012	10/31/96	4.00	Prim	<10
14GP012	10/31/96	12.00	Prim	<10
14GP012	10/31/96	15.00	Prim	<10
14GP013	11/01/96	8.00	Prim	65
14GP013	11/01/96	12.00	Prim	<10
14GP013	11/01/96	15.00	Prim	<10
14GP013	11/01/96	15.00	Dup. 1	<10
14GP014	11/01/96	8.00	Prim	<10
14GP014	11/01/96	10.00	Prim	27
14GP014	11/01/96	15.00	Prim	<10
14GP015	11/01/96	8.00	Prim	<10
14GP015	11/01/96	12.00	Prim	<10
14GP015	11/01/96	15.00	Prim	<10
14GP016	11/03/96	4.00	Prim	28
14GP016	11/03/96	10.00	Prim	270 PI
14GP016	11/03/96	15.00	Prim	280 JPI
14GP016	11/03/96	15.00	Dup. 1	820
14GP017	11/04/96	4.00	Prim	13
14GP017	11/04/96	10.00	Prim	<10
14GP017	11/04/96	15.00	Prim	270
14GP018	11/04/96	4.00	Prim	190 PI
14GP018	11/04/96	10.00	Prim	<10
14GP018	11/04/96	15.00	Prim	<10
14GP019	11/06/96	6.00	Prim	54
14GP019	11/06/96	11.00	Prim	<10
14GP019	11/06/96	15.00	Prim	<10
14GP020	11/06/96	6.00	Prim	<10
14GP020	11/06/96	10.00	Prim	<10
14GP020	11/06/96	15.00	Prim	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - TPH/DROs in Soils  
**Area 14 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
<b>1996 VRP Tier II Non-Residential</b>				6000
14GP021	12/09/96	4.00	Prim	<10
14GP021	12/09/96	12.00	Prim	<10
14GP022	12/12/96	4.00	Prim	<10
14GP022	12/12/96	12.00	Prim	<10
14GP022	12/12/96	14.00	Prim	<10
14GP023	12/12/96	4.00	Prim	360
14GP023	12/12/96	8.00	Prim	<10
14GP023	12/12/96	14.00	Prim	1700
14GP024	12/12/96	8.00	Prim	<10
14GP025	12/13/96	4.00	Prim	11
14GP025	12/13/96	8.00	Prim	<10
14GP025	12/13/96	12.00	Prim	<10
14GP026	12/12/96	4.00	Prim	11
14GP026	12/12/96	8.00	Prim	<10
14GP026	12/12/96	14.00	Prim	2300
14GP027	12/12/96	4.00	Prim	11
14GP027	12/12/96	8.00	Prim	<10
14GP027	12/12/96	12.00	Prim	<10
14GP028	12/12/96	4.00	Prim	<10
14GP028	12/12/96	8.00	Prim	12
14GP028	12/12/96	14.00	Prim	<10
15GP010	11/06/96	4.00	Prim	<10
15GP010	11/06/96	12.00	Prim	<10
15GP010	11/06/96	15.00	Prim	<10
15GP010	11/06/96	15.00	Dup 1	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: P, I, J

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**

**Plant 1 - Former Painting and Degreasing Operations**

**Voluntary Site Investigation**

**AlliedSignal Industrial Complex**

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**South Bend, Indiana**

14GP001

1461881

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

Analytical Summary - Inorganics in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	14GP002	14GP002	14GP002	14GP002	14GP003
SAMPLE ID	14PS00212	14PS00216	14PS00220	14PS00231	14PS00304
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/24/96	10/24/96	11/01/96
DEPTH (ft)	Tier II	12.00	16.00	20.00	31.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total	438	1.6	1.1	0.54	0.65
Barium, Total	10000	<2	5.5	4.8	4.7
Cadmium, Total	730.0	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	<5
Copper, Total	1700	2.8	3.2	3	3.4
Lead, Total	400	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	2.9	6.9	2.1	2.7
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	<1
Zinc, Total	10000	8.6	12	6	11
<b>Sum of Concentrations</b>		<b>20.10</b>	<b>28.70</b>	<b>16.44</b>	<b>22.45</b>
					<b>87.22</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed					
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - Inorganics in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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CONSTITUENT (Units in mg/kg)	SITE	14GP003	14GP003	14GP004	14GP004	14GP004
	SAMPLE ID	14PS00308	14PS00316	14PS00404	14PS00408	14PS00416
	DATE	1996 VRP	10/25/96	10/25/96	10/29/96	10/29/96
DEPTH (ft)	Tier II	8.00	16.00	4.00	8.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	9.2	0.66	2.5	0.41	0.48
Berium, Total	10000	<1	6.2	26	5.4	4.2
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	<5	<5
Copper, Total	1700	2.8	2.6	3.2	2.5	2.3
Lead, Total	400	<5	<5	<5	<6	<6
Mercury, Total	87.60	<0.1	<0.1	1.1	0.11	1.2
Nickel, Total	10000	6.7	3.8	3.7	3.7	2.9
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	8.5	7.4	9.5	7.4	6.8
Sum of Concentrations		38.20	20.65	46.00	18.52	17.88

**Analytical Summary - Inorganics In Soils  
Plant 1 - Former Painting and Degreasing Operations  
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South Bend, Indiana						
	SITE	14GP005	14GP005	14GP005	14GP005	14GP005
	SAMPLE ID	14PS00504	14PS00508	14PS00612	14QD00512	14PS00616
CONSTITUENT	(Units in mg/kg)	DATE	10/29/96	10/29/96	10/29/96	10/29/96
	DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
						Primary
Arsenic, Total		438	0.86	0.47	<0.25	<0.25
Barium, Total		10000	23	5.7	4.5	6.1
Cadmium, Total		730.0	<1	<1	<1	<1
Chromium, Total			<5	<5	<5	<5
Copper, Total		1700	3.7	3	2.3	2.3
Lead, Total		400	<5	<5	<5	<5
Mercury, Total		87.60	1.3	0.11	0.14	0.55
Nickel, Total		10000	6.8	2.9	2.4	2.6
Selenium, Total		7300	<0.6	<0.6	<0.5	<0.5
Silver, Total		7300	<1	<1	<1	<1
Zinc, Total		10000	13	7.8	6.3	6.5
Sum of Concentrations			47.86	19.98	15.64	16.95
						16.62

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**For RCL INORG**      **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - Inorganics in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
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AlliedSignal Industrial Complex  
 South Bend, Indiana

SITE	14GP006	14GP006	14GP006	14GP007	14GP007
SAMPLE ID	14PS00604	14PS00610	14PS00618	14PS00704	14PS00710
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/29/96	10/29/96	10/30/96
DEPTH (ft)	DEPTH (ft)	Tier II	4.00	10.00	16.00
RESULT TYPE	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Arsenic, Total	438	1.3	0.3	0.33	4
Barium, Total	10000	20	5.6	4.5	23
Cadmium, Total	730.0	<1	<1	<1	<1
Chromium, Total			<5	<5	<5
Copper, Total	1700	2.8	3.2	2.8	4.4
Lead, Total	400	<5	<5	<5	<5
Mercury, Total	87.60	0.73	0.13	0.11	<0.1
Nickel, Total	10000	29	3.1	2.5	7.6
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	1.5
Zinc, Total	10000	7.9	8.1	6.8	12
Sum of Concentrations		35.63	20.43	17.04	57.60
					19.20

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana							
	SITE	14GP007	14GP008	14GP008	14GP008	14GP008	14GP008
	SAMPLE ID	14PS00716	14PS00804	14PS00808	14QD00808	14PS00812	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
	DEPTH (ft)	Tier II	16.00	4.00	8.00	8.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Arsenic, Total		438	0.53	1.3	0.71	0.69	0.67
Barium, Total		10000	4	31	4.6	4.7	5.2
Cadmium, Total		730.0	<1	<1	<1	<1	<1
Chromium, Total			<5	8.1	<5	<5	<5
Copper, Total		1700	3	5.2	3.6	3.4	3
Lead, Total		400	<5	<5	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total		10000	3.2	7.3	3.6	3.6	3.5
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5	<0.6
Silver, Total		7300	<1	1.1	<1	<1	<1
Zinc, Total		10000	7.3	16	7.7	8.1	7.4
Sum of Concentrations			18.03	70.00	20.01	20.39	19.77

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Soils**  
**Plant 1 • Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	14GP008	14GP009	14GP009	14GP009	14GP010
	SAMPLE ID	14PS00816	14PS00902	14PS00906	14PS00915	14PS01008
	DATE	1996 VRP	10/30/96	10/30/96	10/30/96	10/31/96
DEPTH (ft)	Tier II	16.00	2.00	8.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.6	0.83	0.61	0.81	1
Barium, Total	10000	4.5	34	4.3	4.6	8.6
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	<5	<5
Copper, Total	1700	2.8	13	3.1	2.9	3
Lead, Total	400	<5	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	0.32	0.14	<0.1	0.13
Nickel, Total	10000	3.2	3	3	3.4	3.6
Selenium, Total	7300	<0.5	<0.5	<0.6	<0.6	<0.6
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	7.2	7.9	6.9	8	9.2
Sum of Concentrations		18.20	69.15	17.85	19.71	25.53

Values represent total concentrations unless noted      <= Not detected at indicated reporting limit      --- = Not analyzed

**Analytical Summary - Inorganics in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	14GP010	14GP010	14GP010	14GP011	14GP011
	SAMPLE ID	14PS01008	14PS01012	14PS01016	14PS01104	14PS01110
	DATE	1996 VRP	10/31/96	10/31/96	10/31/96	10/31/96
DEPTH (ft)	Tier II	8.00	12.00	16.00	4.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	1.0	1.2	0.99	2	0.81
Barium, Total	10000	8.6	5.4	5	32	4.8
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	<5	<5
Copper, Total	1700	3.0	2.4	2.3	4.7	2.3
Lead, Total	400	<5	<5	<5	10	<5
Mercury, Total	87.60	0.13	0.24	0.18	0.13	0.1
Nickel, Total	10000	3.6	3	2.8	3.3	2.6
Selenium, Total	7300	<0.57	<0.6	<0.6	<0.6	<0.6
Silver, Total	7300	<17	<1	<1	<1	<1
Zinc, Total	10000	9.27	8.1	7.3	13	7.1
<b>Sum of Concentrations</b>		<b>25.53</b>	<b>20.34</b>	<b>18.57</b>	<b>65.13</b>	<b>17.61</b>

**Analytical Summary - Inorganics in Soils**  
**Plant 1 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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CONSTITUENT (Units in mg/kg)	SITE	14GP011	14GP012	14GP012	14GP012	14GP012
	SAMPLE ID	14PS01116	14PS01204	14PS01208	14PS01212	14PS01215
	DATE	1996 VRP	10/31/96	10/31/96	10/31/96	10/31/96
DEPTH (ft)	Tier II	16.00	4.00	6.00	12.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.87	2.4	0.87	0.85	1.1
Boron, Total	10000	6.2	46	2.9	7.1	6.6
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	7.1	<5	<5	<5
Copper, Total	1700	2.4	6.3	2.9	5.4	3.5
Lead, Total	400	<5	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	0.11	<0.1	<0.1	<0.1
Nickel, Total	10000	2.6	9.7	3.5	3.6	4.2
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	8.1	20	9.1	9.1	13
Sum of Concentrations		20.17	91.61	19.27	26.05	28.30

Analytical Summary - Inorganics in Soils  
 Plant 1 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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SITE	14GP012	14GP012	14GP012	14GP012	14GP013
SAMPLE ID	14PS01218	14PS01222	14PS01226	14PS01230	14PS01304
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/31/96	10/31/96	10/31/96
DEPTH (ft)	Tier II	18.00	22.00	26.00	30.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.58	1.8	3
Barium, Total		10000	6.1	7.1	6.8
Cadmium, Total		730.0	<1	<1	<1
Chromium, Total			<6	6.6	<6
Copper, Total		1700	2.7	7.8	4.8
Lead, Total		400	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1
Nickel, Total		10000	3.5	4.8	4.9
Selenium, Total		7300	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	<1
Zinc, Total		10000	6.9	10	64
Sum of Concentrations			19.78	37.00	73.60
					108.60
					50.17
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - Inorganics In Soils  
Plant 1 - Former Painting and Degreasing Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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South Bend, Indiana							
CONSTITUENT (Units: in mg/kg)	SITE	14GP013	14GP013	14GP013	14GP014	14GP014	14GP014
	SAMPLE ID	14PS01312	14QD01312	14PS01315	14PS01404	14PS01410	
	DATE	1996 VRP	11/01/96	11/01/96	11/01/96	11/01/96	11/01/96
DEPTH (ft)	Tier II	12.00	12.00	15.00	8.00	10.00	
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.86	0.62	0.63	3.7	0.71	
Berium, Total	10000	4.6	4.9	4.9	39	7.2	
Cadmium, Total	730.0	<1	<1	<1	<1	<1	
Chromium, Total		<5	<5	<5	6.4	<5	
Copper, Total	1700	2.6	3.6	3.2	5.2	3.6	
Lead, Total	400	<5	<5	<5	<5	<5	
Mercury, Total	87.60	0.12	<0.1	0.26	<0.1	<0.1	
Nickel, Total	10000	2.7	2.6	3	3.3	3.5	
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5	
Silver, Total	7300	<1	<1	<1	<1	<1	
Zinc, Total	10000	6.7	7.7	7	11	9.6	
Sum of Concentrations		17.58	19.32	18.99	67.60	24.51	

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SITE	14GP014	14GP015	14GP015	14GP015	14GP015	14GP015
SAMPLE ID	14PS01415	14PS01504	14PS01512	14PS01515	14QD01515	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/01/96	11/01/96	11/01/96	11/01/96
	DEPTH (ft)	Tier II	15.00	8.00	12.00	15.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Arsenic, Total		438	1.1	1.5	0.71	0.74
Barium, Total		10000	4.9	2.6	6.4	4.2
Cadmium, Total		730.0	<1	<1	<1	<1
Chromium, Total			<5	6.7	<5	<5
Copper, Total		1700	3.1	7.2	3.1	3
Lead, Total		400	<5	<5	<5	<5
Mercury, Total		87.60	<0.1	<0.1	0.16	<0.1
Nickel, Total		10000	3.6	6.2	2.6	2.7
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	<1	<1
Zinc, Total		10000	21	16	7.1	7.3
<b>Sum of Concentrations</b>		<b>33.70</b>	<b>63.60</b>	<b>19.07</b>	<b>17.94</b>	<b>18.26</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential					

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#### AlliedSignal Industrial Complex

**South Bend, Indiana**

14GP016

CONSTITUENT (Units in mg/kg)	SITE	14GP016	14GP016	14GP016	14GP016	14GP017
	SAMPLE ID	14PS01604	14PS01610	14PS01616	14QD01616	14PS01704
	DATE	1996 VRP	11/03/96	11/03/96	11/03/96	11/04/96
DEPTH (ft)	Tier II	4.00	10.00	15.00	15.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Arsenic, Total	438	1.3	1	0.7	0.7	27
Barium, Total	10000	28	4	4.6	4.9	42
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		6.9	<6	<6	<6	<6
Copper, Total	1700	3.8	2.6	2.8	2.8	5.2
Lead, Total	400	<5	<5	<5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	4.4	6.1	2.6	2.9	5.9
Selenium, Total	7300	<0.5	<0.5	<0.6	<0.6	<0.6
Silver, Total	7300	<1	<1	<1	<1	2.3
Zinc, Total	10000	12	12	6.2	6.3	17
Sum of Concentrations		56.20	24.70	16.90	17.60	99.40

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For BCL INORG Criteria Comparison 1996 VRP Tier II Non-Residential

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South Bend, Indiana							
	SITE	14GP017	14GP017	14GP017	14GP018	14GP018	
	SAMPLE ID	14PS01710	14PS01715	14QD01715	14PS01804	14PS01810	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96	11/04/96	11/04/96
	DEPTH (ft)	Tier II	10.00	15.00	15.00	4.00	10.00
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Primary
Arsenic, Total		438	1.4	1.2	1	22	1.7
Barium, Total		10000	3.9	4.3	4.2	142	4.2
Cadmium, Total		730.0	<1	<1	<1	8.2	<1
Chromium, Total			<5	<5	<5	41	<5
Copper, Total		1700	1.9	2.1	2.1	56	1.8
Lead, Total		400	<5	<5	<5	56	<5
Mercury, Total		87.60	<0.1	<0.1	<0.1	0.47	<0.1
Nickel, Total		10000	2.6	2.7	3.0	13	2.1
Selenium, Total		7300	<0.5	<0.5	<0.5	0.71	<0.5
Silver, Total		7300	<1	<1	<1	2.1	<1
Zinc, Total		10000	6.5	7.6	8.7	140	5.8
Sum of Concentrations			16.30	17.90	19.60	480.48	15.60

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL INORG

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

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SITE	14GP018	14GP019	14GP019	14GP019	14GP020
SAMPLE ID	14PS01816	14PS01906	14PS01911	14PS01915	14PS02004
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/04/96	11/06/96	11/06/96
DEPTH (ft)	Tier II	15.00	6.00	11.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.72	9	0.5	0.63
Barium, Total	10000	6.7	70	4.5	6.9
Cadmium, Total	730.0	<1	2.6	<1	<1
Chromium, Total		<6	0.3	<6	<6
Copper, Total	1700	3.1	11	2.5	2.4
Lead, Total	400	<5	6.5	<5	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	6.6	8	2.2	2.1
Selenium, Total	7300	<0.5	<0.5	<0.6	<0.6
Silver, Total	7300	<1	2.1	<1	<1
Zinc, Total	10000	9.3	31	7	7.3
<b>Sum of Concentrations</b>		<b>26.32</b>	<b>149.40</b>	<b>16.70</b>	<b>19.23</b>
					<b>136.08</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
FCL INORG	██████████	██████████	██████████	██████████	██████████
Sample Comparison	██████████	██████████	██████████	██████████	██████████
VRP	██████████	██████████	██████████	██████████	██████████
Non-Residential	██████████	██████████	██████████	██████████	██████████

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South Bend, Indiana							
	SITE	14GP020	14GP020	14GP021	14GP021	14GP021	
	SAMPLE ID	14PS02010	14PS02015	14PS02104	14PS02108	14PS02112	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/06/96	11/06/96	12/09/96	12/09/96	12/09/96
	DEPTH (ft)	Tier II	10.00	15.00	4.00	6.00	12.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.56	0.78	1.8	1.4	0.81
Barium, Total		10000	3.5	5.8	33	24	3.8
Cadmium, Total		730.0	<1	<1	1	<1	<1
Chromium, Total			<5	<5	<5	<5	<5
Copper, Total		1700	2.8	3.4	6.8	7.7	2.7
Lead, Total		400	<5	<5	24	17	<5
Mercury, Total		87.60	<0.1	<0.1	0.2	0.11	<0.1
Nickel, Total		10000	3.2	3.6	4.7	4.7	3.3
Selenium, Total		7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total		7300	<1	<1	<1	<1	<1
Zinc, Total		10000	8.7	11	21	20	7.9
Sum of Concentrations			18.75	24.58	92.60	74.91	18.51

Values represent total concentrations unless noted      < =Not detected at indicated reporting limit      --- = Not analyzed

For RCL INORG

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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CONSTITUENT (Units in mg/kg)	SITE	14GP022	14GP022	14GP022	14GP023	14GP023
	SAMPLE ID	14PS02204	14PS02212	14PS02214	14PS02304	14PS02308
DATE	1996 VRP	12/12/96	12/12/96	12/12/96	12/12/96	12/12/96
DEPTH (ft)	Tier II	4.00	12.00	14.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	1.6	0.66	0.58	1.7	1.4
Barium, Total	10000	<3	<10	<8	37	8.1
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		<5	<5	<5	<5	<5
Copper, Total	1700	4.2	4.4	2.9	5.8	3.2
Lead, Total	400	<5	<5	<5	16	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	4.9	3.9	3	3.6	3.1
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	12	13	7.5	12	8.6
Sum of Concentrations		31.00	31.95	18.78	75.00	24.40

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

RCL IN --- Ma Co. --- VRP --- Non-Residential ---

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edSignal Industrial Complex

**AlliedSignal Industrial Complex**  
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## **South Bend, Indiana**

South Bend, Indiana

South Bend, Indiana							
	SITE	14GP023	14GP025	14GP025	14GP025	14GP025	14GP025
	SAMPLE ID	14PS02314	14PS02504	14PS02506	14PS02512	14QD02512	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	12/12/96	12/13/96	12/13/96	12/13/96	12/13/96
DEPTH (ft)	Tier II	14.00	4.00	8.00	12.00	12.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Duplicate T
Arsenic, Total	438	0.88	8.5	2.9	1.1 J	8.6	
Barium, Total	10000	10	16	94	7.8 J	21	
Cadmium, Total	730.0	<1	<1	<1	<1	<1	
Chromium, Total		13	<5	<5	<5 UJ	7.9	
Copper, Total	1700	6.2	3.6	6.2	2.8	4.2	
Lead, Total	400	<5	<5	<5	<5	<5	
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	4.3	4	5.6	6.1	5.3	
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	<0.5	
Silver, Total	7300	<1	1.1	1.1	<1 UJ	1.1	
Zinc, Total	10000	14	14	15	11	14	
Sum of Concentrations		47.38	47.20	124.80	27.80	62.10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

## Criteria Comparison: 1996 VRP Tier II Non-Residential

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	SITE	14GP026	14GP026	14GP026	14GP027	14GP027
CONSTITUENT (Units in mg/kg)	SAMPLE ID	14PS02604	14PS02608	14PS02614	14PS02704	14PS02708
DATE	1996 VRP	12/12/96	12/12/96	12/12/96	12/12/96	12/12/96
DEPTH (ft)	Tier II	4.00	8.00	14.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	5.6	0.66	41	1.8
Barium, Total		10000	219	7.2	7.1	41
Cadmium, Total		730.0	(1930)	2.4	<1	7.1
Chromium, Total			21	<5	<5	5.8
Copper, Total		1700	1150	5.3	2.4	14
Lead, Total		400	(5360)	6.8	<6	14
Mercury, Total		87.60	0.41	<0.1	<0.1	<0.1
Nickel, Total		10000	80	4.5	3.7	5
Selenium, Total		7300	<0.6	<0.5	<0.5	<0.5
Silver, Total		7300	2.8	<1	1.1	2.1
Zinc, Total		10000	853	12	10	26
Sum of Concentrations		9621.71	38.76	66.30	113.70	124.10
Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed						
II = Greater than Detection Level						
E = DCL INORG						
C = Comparison 1 VRP						
N = Non-Residential						

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SOUTH BEND, INDIANA						
CONSTITUENT (Units in mg/kg)	SITE	14GP027	14GP028	14GP028	14GP028	14GP028
	SAMPLE ID	14PS02712	14PS02804	14PS02808	14PS02814	
	DATE	1996 VRP	12/12/96	12/12/96	12/12/96	12/12/96
DEPTH (ft)	Tier II	12.00	4.00	8.00	14.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	1	1.3	1.4	1.3	
Barium, Total	10000	5.7	15	90	11	
Cadmium, Total	730.0	<1	<1	<1	<1	
Chromium, Total		<5	<5	<5	<5	
Copper, Total	1700	3.2	5.4	6.3	3.6	
Lead, Total	400	<5	<5	<5	<5	
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	
Nickel, Total	10000	4	4	5.7	4.9	
Selenium, Total	7300	<0.5	<0.5	<0.5	<0.5	
Silicon, Total	7300	<1	<1	<1	<1	
Zinc, Total	10000	9.4	12	17	9.8	
Sum of Concentrations		23.30	37.70	120.40	41.50	

**Analytical Summary - VOCs in Groundwater  
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CONSTITUENT (Unité in ug/l)	SITE	14GP003	14GP004	14GP009	14GP011	14GP021
	SAMPLE ID	1996 VRP	14PW00322	14PW00419	14PW00921	14PW01120
	DATE	Tier II	10/25/96	10/29/96	10/30/96	12/09/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<10	7	[39]	<2
Toluene		20440	<5	<5	<5	<5
Xylyne (total)		204400	<10	<5	<5	6.5 JB
1,2,4-Trimethylbenzene		5.11E+3	<1	<5	<5	<5
1,1-Dichloroethane		10220	33 J	68	210	<5
1,1-Dichloroethene		7	<5	<5	[12]	<5
cis-1,2-Dichloroethene		1022	400 J	200	78	<5
trans-1,2-Dichloroethene		2040	<5	5.3	<5	<5
1,1,1-Trichloroethane		9198	<5	27	270	<5
Tetrachloroethene		56.1	<5	<5	<5	<5
Trichloroethane		260	130 J	160 B	[370]	<5
Sum of Concentrations		563.00	467.30	877.00	0.00	186.50

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

[ ] = Greater than Action Level

For RCL VOC

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CONSTITUENT (Units in ug/l)	SITE	14GP028	14GP029	14GP031	14GP031	14GP032	
	SAMPLE ID	1996 VRP	14PW02819	14PW02919	14PW03119	14QD03119	14PW03219
	DATE	Tier II	12/12/96	07/15/97	07/15/97	07/15/97	07/15/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate	1	Primary
Vinyl chloride	10	[32]	<2	[18]	[17]	<2	
Toluene	20440	17	<5	<5	<5	<5	<5
Xylene (total)	204400	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<5	<5	6.3	<5	<5	<5
1,1-Dichloroethane	10220	6.3	71	100	97	180	
1,1-Dichloroethene	7	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	5.8	220	9.3	8.3	41	
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	9198	<5	48	7.1	6.6	71	
Tetrachloroethene	56.1	<5	<5	<5	<5	<5	<5
Trichloroethene	260	20	210	<5	<5	64	
Sum of Concentrations		81.10	649.00	139.70	128.90	346.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

II = Greater than Action Level

For RCL V

Analytical Summary - VOCs in Groundwater  
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South Bend, Indiana						
CONSTITUENT (Units in ug/l)	SITE	86-10	86-10	86-10	86-15	86-15
	SAMPLE ID	1996 VRP				
	DATE	Tier II	06/05/97	09/25/97	12/09/97	03/12/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<10 E	<10	<2	<2
Toluene	20440	<5	<5.0 E	<5.0	<5	<5
Xylene (total)	204400	<5	<10 E	<10	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	...	...	...	<400	<400
1,1-Dichloroethane	10220	<5	<5.0 E	<5.0	<5	<5
1,1-Dichloroethene	7	<5	<5.0 E	<5.0	<5	<5
cis-1,2-Dichloroethene	1022	95	92 J	98	49	40
trans-1,2-Dichloroethene	2040	12	12 J	12	66	50
1,1,1-Trichloroethane	9198	<5	<5.0 E	<5.0	<5	<5
Tetrachloroethene	56.1	<5	<5.0 E	<5.0	<5	<5
Trichloroethene	260	100	120 J	120	[400]	[310]
Sum of Concentrations		207.00	224.00	230.00	515.00	400.00

**Analytical Summary - VOCs in Groundwater**  
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CONSTITUENT (Units in ug/l)	SITE	66-16	66-16	66-15	66-16	66-16	66-16
	SAMPLE ID	1996 VRP			66-16		
	DATE	Tier II	09/04/96	12/10/96	03/16/97	06/05/97	06/05/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate
Vinyl chloride		10	<2	<2	<10	<2	<2
Toluene		20440	<5	<5	<5	<5	<5
Xylene (total)		204400	<5	<5	<10	<5	<5
1,2,4-Trimethylbenzene		5.11E+3	---	---	---	---	---
1,1-Dichloroethane		10220	<5	<5	<5	<5	<5
1,1-Dichloroethene		7	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene		1022	<5	32	35	38	33
trans-1,2-Dichloroethene		2040	44	49	60	68	63
1,1,1-Trichloroethane		9198	<5	<5	<5	<5	<5
Tetrachloroethene		56.1	<5	<5	<5	<5	<5
Trichloroethene		260	[350]	[320]	[330]	[330]	[290]
Sum of Concentrations			394.00	401.00	426.00	426.00	376.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

II = Greater than Action Level

Central Comparison 1996-VRP Time Non-Presidential

**Analytical Summary - VOCs in Groundwater**  
**Plant 1 - Former Painting and Degreasing Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT (Units in ug/l)	SITE	86-15	86-15	MW-7	MW-7	MW-7
	SAMPLE ID	1996 VRP			1996 VRP	
	DATE	Tier II	09/25/97	12/09/97	12/19/96	03/18/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<10	[94]	[63]	[120]
Toluene	20440	<5.0	<5.0	<6	<5	<5
Xylene (total)	204400	<10	<10	<5	<10	<5
1,2,4-Trimethylbenzene	5.11E+3			<400		
1,1-Dichloroethane	10220	<5.0	<5.0	29	15	28
1,1-Dichloroethene	7	<5.0	<5.0	<6	<5	<5
cis-1,2-Dichloroethene	1022	32	33	280 J	230	350
trans-1,2-Dichloroethene	2040	48	50	<6	<6	<5
1,1,1-Trichloroethane	9198	<5.0	<5.0	<6	<6	<6
Tetrachloroethene	58.1	<5.0	<5.0	<6	<5	<6
Trichloroethene	260	[260]	[290]	18	<6	<6
<b>Sum of Concentrations</b>		340.00	373.00	421.00	308.00	498.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

11 = Greater than Action Level

| For RCL VOCT

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Groundwater  
Plant 1 - Former Painting and Degreasing Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT [Units in ug/l]	SITE SAMPLE ID	1996 VRP DATE	MW-7	MW-7	MW-8	MW-8	MW-8
			Tier II	08/25/97	12/09/97	12/19/98	03/18/97
			RESULT TYPE	Non-Residential	Primary	Primary	Primary
Vinyl chloride	10	1811	(95)	<2	[14]		<2
Toluene	20440		<6.0	<6.0	17	<6	<6
Xylene (total)	204400	<10	<10	<5	<10	<5	
1,2,4-Trimethylbenzene	5.11E +3				<400		
1,1-Dichloroethane	10220	19	16	430	330	440	
1,1-Dichloroethene	7	<5.0	<5.0	<5	5.3		<6
cis-1,2-Dichloroethene	1022	290	270	900	1000	(1400)	
trans-1,2-Dichloroethene	2040	<5.0	<5.0	6.7	9		<5
1,1,1-Trichloroethane	9198	<5.0	<5.0	8	7.8		<5
Tetrachloroethene	56.1	<5.0	<5.0	18	19		<5
Trichloroethene	260	<5.0	<5.0	200	78		140
Sum of Concentrations		390.00	381.00	1584.70	1462.90		1980.00

**Values represent total concentrations unless noted**      < = Not detected at indicated reporting limit      --- = Not analyzed

=Greater than Selection Level The following qualifier(s) exist: J, B, U, E

F-8CL V004

**Analytical Summary - Inorganics in Groundwater  
Plant 1 - Former Painting and Degreasing Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

South Bend, Indiana							
CONSTITUENT (Units in µg/l)	SITE	14GP003	14GP011	86-10	86-10	86-10	86-10
	SAMPLE ID	1996 VRP	14PW00322	14PW01120	86-10	86-10	86-10
	DATE	Tier II	10/25/96	10/31/96	09/04/96	03/18/97	09/25/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Cyanide	2044			ND	<5	6	
Arsenic, Dissolved (Filtered)	50	2	<1	---	---	---	---
Barium, Dissolved (Filtered)	7154	44	153	---	---	---	---
Copper, Dissolved (Filtered)	3800	<10	<10	---	---	---	---
Lead, Dissolved (Filtered)	1.50E+1	<1	<1	---	---	---	---
Nickel, Dissolved (Filtered)	2040	<10	<10	---	---	---	---
Chromium, Total				13	<5		
Lead, Total				2.7	2.4		
Nickel, Total				5.4	<20		
Sum of Concentrations	46.00	153.00	21.10	2.40	6.00		

Analytical Summary - Inorganics in Groundwater  
 Plant 1 - Former Painting and Degreasing Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	86-15	86-15	86-15	MW-7	MW-7
	SAMPLE ID	1996 VRP		86-15		MW-7
	DATE	Tier II	09/04/96	03/18/97	09/25/97	12/19/98
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	ND	<5	<6	ND	<6
Arsenic, Dissolved (Filtered)	50	---	---	---	<1	---
Barium, Dissolved (Filtered)	7184	---	---	---	66	---
Copper, Dissolved (Filtered)	3800	---	---	---	<10	---
Lead, Dissolved (Filtered)	1.50E+1	---	---	---	<1	---
Nickel, Dissolved (Filtered)	2040	---	---	---	<10	---
Chromium, Total	4.8	<5	---	---	---	75
Lead, Total	5.8	6.4	---	---	---	85
Nickel, Total	11	<20	---	---	---	110
Sum of Concentrations	21.60	6.40	0.00	56.00	270.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

For ECL INORG

Calgon Corporation 1996 VRP Tier II Non-Confidential

**Analytical Summary - Inorganics in Groundwater  
Plant 1 - Former Painting and Degreasing Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent with more than one test method, highest result reported.

For PCL VOC

**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in mg/kg)	SITE	14GP019	14GP024	14GP031	14GP031	14GP031
	SAMPLE ID	14PS01915	14PS02408	14PS03104	14PS03108	14PS03112
	DATE	1996 VRP	11/06/96	12/12/96	07/16/97	07/15/97
DEPTH (ft)	Tier II	15.00	8.00	4.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.26	<0.26	<0.05	<0.06	<0.06
Ethyl benzene	1000	<0.26	<0.26	<0.05	<0.06	<0.06
Xylenes (total)	1000	<0.26	<0.26	<0.05	<0.06	<0.06
1,3,5-Trimethylbenzene	1.00E+03	<0.26	<0.26	0.077	<0.06	<0.06
1,2,4-Trimethylbenzene	1.00E+3	<0.26	<0.26	0.19	<0.06	<0.06
Naphthalene	10000	<0.26	<0.26	<0.05	0.28	<0.06
2-Methylnaphthalene	10000	<0.6	<0.5	<0.1	0.69	<0.1
1,1-Dichloroethane	1000	<0.1	<0.1	<0.05	<0.06	<0.06
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.05	<0.06	<0.05
1,1,1-Trichloroethane	1000	<0.1	<0.1	0.068	<0.06	0.10
Tetrachloroethene	8.01	<0.1	<0.1	<0.05	0.12	<0.06
Trichloroethene	26.73	<0.1	<0.1	<0.06	<0.06	0.11
Sum of Concentrations		0.00	0.00	0.33	1.09	0.21

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - VOCs in Soils  
 Plant 1 - Former Metal Stamping Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	14GP031	14GP032	14GP032	14GP032	14GP032
	SAMPLE ID	14PS03116	14PS03204	14PS03208	14PS03212	14PS03216
DATE	1996 VRP	07/15/97	07/15/97	07/15/97	07/15/97	07/15/97
DEPTH (ft)	Tier II	16.00	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	0.28	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	1000	0.61	< 0.05	< 0.05	< 0.05	< 0.05
Xylene (total)	1000	2.0	< 0.05	< 0.05	< 0.05	< 0.05
1,3,5 Trimethylbenzene	1.00E + 03	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4 Trimethylbenzene	1.00E + 3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	10000	1.4	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	10000	4.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethene	1000	0.10	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethene	102.49	0.15	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethene	1000	1.3	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethene	8.01	0.51	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethene	26.73	0.62	< 0.05	< 0.05	< 0.05	< 0.05
Sum of Concentrations		10.87	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

■ = BCL VOC      ■ = Concentration 1      ■ = Non-Residential      ■ = Residential      ■ = Residential

**Analytical Summary - VOCs in Soils  
Plant 1 - Former Metal Stamping Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
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South Bend, Indiana						
SITE	15GP001	15GP001	15GP001	15GP002	15GP002	15GP002
SAMPLE ID	15PS00104	15PS00110	15PS00115	15PS00208	15PS00210	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96	11/04/96
DEPTH (ft)	Tier II	4.00	10.00	15.00	8.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene	25.73	<0.1	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

Analytical Summary - VOCs in Soils  
 Plant 1 - Former Metal Stamping Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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SITE	15GP002	15GP003	15GP003	15GP003	15GP004
SAMPLE ID	15PS00215	15PS00306	15PS00310	15PS00316	15PS00404
CONSTITUENT (Units: mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96
DEPTH: (ft)	RESULT TYPE	Tier II	6.00	10.00	16.00
		Non-Residential	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.25	<0.25
Xylenes (total)		1000	<0.25	<0.25	<0.25
1,3,5 Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25
1,2,4 Trimethylbenzene		1.00E+3	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1
1,1,1-Trichloroethane		1000	<0.1	<0.1	<0.1
Tetrachloroethane		8.01	<0.1	<0.1	<0.1
Trichloroethene		26.73	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non Residential

**Analytical Summary – VOCs in Soils  
Plant 1 – Former Metal Stamping Operations  
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CONSTITUENT (Units in mg/kg)	SITE	T6GP004	15GP004	15GP004	15GP005	15GP005
	SAMPLE ID	15PS00408	15PS00408	15PS00415	15PS00508	15PS00510
	DATE	1996 VRP	11/04/96	11/04/96	11/04/96	11/05/96
DEPTH (ft)	Tier II	6.00	8.00	15.00	6.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	0.093 J	<0.25	<0.25	<0.25 E	<0.25
Ethyl benzene	1000	<0.05	<0.25	<0.25	<0.25 E	<0.25
Xylene (total)	1000	<0.05	<0.25	<0.25	<0.25 E	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.05	<0.25	<0.25	<0.25 E	<0.25
1,2,4-Trimethylbenzene	1.00E+03	<0.05	<0.25	<0.25	<0.25 E	<0.25
Naphthalene	10000	<0.33#	<0.25	<0.25	<0.25 E	<0.25
2-Methylnaphthalene	10000	<0.33#	<0.5	<0.5	<0.5 E	<0.5
1,1-Dichloroethane	1000	<0.05	<0.1	<0.1	0.68 J	<0.1
cis-1,2-Dichloroethane	102.49	<0.05	<0.1	<0.1	<0.1 E	<0.1
1,1,1-Trichloroethane	1000	<0.05	<0.1	<0.1	<0.1 E	0.8
Tetrachloroethene	8.01	<0.05	<0.1	<0.1	<0.1 E	0.17
Trichloroethene	26.73	0.35 J	<0.1	<0.1	0.14 J	0.17
Sum of Concentrations		0.44	0.00	0.00	0.82	1.14

**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
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CONSTITUENT (Units in mg/kg)	SITE	15GP005	15GP006	15GP006	15GP008	15GP007
	SAMPLE ID	15PS00515	15PS00606	15PS00610	15PS00617	15PS00704
DATE	1996 VRP	11/05/96	11/05/96	11/05/96	11/05/96	11/05/96
DEPTH (ft)	Tier II	15.00	6.00	10.00	17.00	6.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.25
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.25
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.25
1,2,4-Trimethylbenzene	1.00E+3	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.25
2-Methylnaphthalene	10000	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene	102.48	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	1000	0.16	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	8.01	<0.1	<0.1	<0.1	<0.1	0.13
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.1	<0.1
<b>Sum of Concentrations</b>		<b>0.16</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.13</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For BCL VOC

Colorado Comparison Table VRP Tier II Non-Residential

Analytical Summary - VOCs in Soils  
 Plant 1 - Former Metal Stamping Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in mg/kg)	SITE	15GP007	15GP007	15GP008	15GP008	15GP008
	SAMPLE ID	15PS00711	16PS00718	16PS00804	15PS00808	16PS00812
DATE	1996 VRP	11/05/96	11/05/96	11/05/96	11/05/96	11/05/96
DEPTH (ft)	Tier II	10.00	18.00	6.00	8.00	12.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.25	<0.25	<0.25	<0.05
Ethyl benzene	1000	<0.25	<0.25	<0.25	<0.25	<0.05
Xylene (total)	1000	<0.25	<0.25	<0.25	<0.25	<0.1
1,3,5-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.01
1,2,4-Trimethylbenzene	1.00E+03	<0.25	<0.25	<0.25	<0.25	<0.01
Naphthalene	10000	<0.25	<0.25	<0.25	<0.25	<0.05#
2-Methylnaphthalene	10000	<0.6	<0.5	<0.6	<0.6	<0.1
1,1-Dichloroethene	1000	<0.1	<0.1	<0.1	<0.1	<0.05
cis-1,2-Dichloroethene	102.49	<0.1	<0.1	<0.1	<0.1	<0.06
1,1,1-Trichloroethane	1000	<0.1	<0.1	<0.1	<0.1	<0.05
Tetrachloroethene	8.01	0.19	<0.1	<0.1	<0.1	<0.05
Trichloroethene	26.73	<0.1	<0.1	<0.1	<0.1	<0.05
Sum of Concentrations		0.19	0.00	0.00	0.00	0.00
<hr/>						
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed						
# = Constituent in more than one test method, highest result reported.						
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential					

**Analytical Summary - VOCs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	15GP008	16GP008	16GP009	16GP009	16GP009
	SAMPLE ID	15PS00815	16QD00808	16PS00904	16PS00912	16P800916
	DATE	1996 VRP	11/05/96	11/05/96	11/06/96	11/06/96
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Toluene		1000	<0.25	<0.25	<0.25	<0.25
Ethylbenzene		1000	<0.25	<0.25	<0.25	<0.25
Xylole (total)		1000	<0.25	<0.25	<0.25	<0.25
1,3,5 Trimethylbenzene		1.00E+03	<0.25	<0.25	<0.25	<0.25
1,2,4 Trimethylbenzene		1.00E+3	<0.25	<0.25	<0.25	<0.25
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
2-Methylnaphthalene		10000	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane		1000	<0.1	<0.1	<0.1	<0.1
cis-1,2-Dichloroethene		102.49	<0.1	<0.1	<0.1	<0.1
1,1,1 Trichloroethane		1000	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene		8.01	<0.1	<0.1	<0.1	<0.1
Trichloroethene		26.73	<0.1	<0.1	<0.1	<0.1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

CL V [REDACTED] Collection 1 VRP Non-Residential [REDACTED]

**Analytical Summary - VOCs in Soils  
Unit 1 - Former Metal Stamping Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

| For RCL VOC

## Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils  
Plant 1 - Former Metal Stamping Operations  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT (Units in mg/kg)	SITE	15GP011	15GP012	15GP012	15GP012	15GP013
	SAMPLE ID	15PS01108	15PS01208	15PS01214	15PS01216	15PS013
	DATE	1996 VRP	12/12/96	07/15/97	07/15/97	07/15/97
DEPTH (ft)	Tier II	8.00	8.00	14.00	16.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Toluene	1000	<0.25	<0.05	<0.05	<0.05	<0.05
Ethyl benzene	1000	<0.25	<0.05	<0.05	<0.05	<0.05
Xylene (total)	1000	<0.25	<0.05	<0.05	1.0	<0.05
1,3,5 Trimethylbenzene	1.00E+03	<0.25	<0.05	<0.05	<0.05	<0.05
1,2,4 Trimethylbenzene	1.00E+3	<0.25	<0.05	<0.05	<0.05	<0.05
Naphthalene	10000	<0.25	<0.05	<0.05	1.6	<0.05
2-Methylnaphthalene	10000	<0.5	<0.1	<0.1	12	<0.1
1,1-Dichloroethane	1000	<0.1	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethane	102.49	<0.1	<0.05	<0.05	0.63	<0.05
1,1,1-Trichloroethane	1000	<0.1	<0.05	<0.05	2.2	<0.05
Tetrachloroethene	8.01	<0.1	2.8	0.29	[36]	0.41
Trichloroethene	25.73	<0.1	0.86	<0.05	5.0	<0.05
Sum of Concentrations	0.00	3.66	0.29	57.23	0.41	

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

[ ] = Greater than the Nation Level

F-1861-V03

Analytical Summary - VOCs in Soils  
 Plant 1 - Former Metal Stamping Operations  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT	(Units: mg/kg)	SITE	15GP013	15GP013
		SAMPLE ID	15PS01310	15PS01314
DATE	1996 VRP	07/15/97	07/15/97	
DEPTH (ft)	Tier II	10.00	14.00	
RESULT TYPE	Non-Residential	Primary	Primary	
Toluene	1000	< 0.05	< 0.05	
Ethyl benzene	1000	< 0.05	< 0.05	
Xylene (total)	1000	0.57	0.43	
1,3,5-Trimethylbenzene	1.00E+03	< 0.05	< 0.05	
1,2,4-Trimethylbenzene	1.00E + 3	< 0.05	< 0.05	
Naphthalene	10000	< 0.05	< 0.05	
2-Methylnaphthalene	10000	< 0.1	< 0.1	
1,1-Dichloroethane	1000	< 0.05	< 0.05	
cis-1,2-Dichloroethane	102.49	0.16	0.14	
1,1,1-Trichloroethane	1000	0.99	0.75	
Tetrachloroethene	8.01	6.6	5.9	
Trichloroethene	26.73	0.73	0.66	
Sum of Concentrations		9.06	7.88	
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed				
The following qualifier(s) exist: J, E				
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential			

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
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### **South Bend, Indiana**

CONSTITUENT (Units in mg/kg)	SITE	14GP011	14GP011	14GP011	14GP019	14GP019
	SAMPLE ID	14PS01104	14P601110	14PS01116	14P601906	14P601911
	DATE	1996 VRP	10/31/96	10/31/96	10/31/96	11/06/96
DEPTH (ft)	Tier II	4.00	10.00	16.00	6.00	11.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Naphthalene	10000	<0.26	<0.26	<0.05#	<0.26	<0.25
Sum of Concentrations	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

# = Constituent with more than one test method, highest result reported.

For RCL RNA Sanger Comparison 1990 VRP Nonradioactive

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**

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**South Bend, Indiana**

14GP019 14G

14GF013

SITE	14GP019	14GPO24	14GP031	14GP031	14GP031
SAMPLE ID	14PS01915	14PS02406	14PS03104	14PS03108	14PS03112
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/06/96	12/12/96	07/15/97
	DEPTH (ft)	Tier II	15.00	8.00	4.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary
Naphthalene	10000	< 0.26	< 0.26	< 0.05	0.28
Sum of Concentrations		0.00	0.00	0.00	0.28
					0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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#### **Plant 1 - Former Metal Stamping Operations**

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## Voluntary Site Investigation

#### AlliedSignal Industrial Complex

## South Bend, Indiana

CONSTITUENT CONSTITUENT CONSTITUENT	SITE	14GP031	14GP032	14GP032	14GP032	14GP032
	SAMPLE ID	14PS03110	14PS03204	14PS03208	14PS03212	14PS03216
	(Units in mg/kg)	DATE	1996 VRP	07/16/97	07/16/97	07/16/97
DEPTH (ft)	Tier II	16.00	4.00	8.00	12.00	16.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Naphthalene		10000	1.4	<0.05	<0.05	<0.05
Sum of Concentrations			1.40	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For PCL PNA  Order Confirmation 100% VRP Non-ventilated

## Analytical Summary - PNAs in Soils

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### **Plant 1 - Former Metal Stamping Operations**

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## Voluntary Site Investigation

dSignal Industrial Com

South Bend, Indiana						
SITE		15GP001	15GP001	15GP001	15GP002	15GP002
SAMPLE ID		15PS00104	15PS00110	15PS00115	15PS00208	15PS00210
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96	11/04/96
DEPTH (ft)	Tier II	4.00	10.00	15.00	6.00	10.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Naphthalene		10000	<0.25	<0.25	<0.25	<0.25
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted    <=Not detected at indicated reporting limit    ---=Not analyzed

For RCL PNA

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - PNAs in Soils

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## **Plant 1 - Former Metal Stamping Operations**

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## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

South Bend, Indiana

	SITE	16GP002	16GP003	16GP003	16GP003	16GP004
	SAMPLE ID	16PS00216	16PS00306	16PS00310	16PS00316	16PS00404
CONSTITUENT	(Units in mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96
	DEPTH (ft)	Tier II	15.00	6.00	10.00	16.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene		10000	<0.26	<0.26	<0.26	<0.26
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted      <=Not detected at indicated reporting limit      ---=Not analyzed

From PCL PMAA Cyclic Copolymer VRP Non-Polymer

**Analytical Summary - PNAs In Soils**  
**nt 1 - Former Metal Stamping Operations**  
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SOUTH DAKOTA, TRADING						
SITE	15GP004	15GP004	15GP004	15GP005	15GP005	15GP005
SAMPLE ID	15PS00406	15PS00408	15PS00415	15PS00508	15PS00510	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/04/96	11/04/96	11/04/96	11/05/96
	DEPTH (ft)	Tier II	6.00	6.00	15.00	6.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene		10000	<0.33#	<0.25	<0.25	<0.25 E
Sum of Concentrations			0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

# = Constituent in more than one test method, highest result reported.

For RCL PNA

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
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SOUTH BEND, INDIANA						
	SITE	15GP005	15GP006	15GP006	15GP006	15GP007
	SAMPLE ID	15PS00515	15PS00606	15PS00610	15PS00617	15PS00704
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/05/96	11/05/96	11/05/96	11/05/96
	DEPTH (ft)	Tier II	15.00	8.00	10.00	7.00
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Naphthalene		10000	< 0.25	< 0.25	< 0.25	< 0.25
Sum of Concentrations			0.00	0.00	0.00	0.00

Analytical Summary - PNAs in Soils  
 Plant 1 - Former Metal Stamping Operations  
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South Bend, Indiana

SITE	15GP007	15GP007	15GP008	15GP008	15GP008
SAMPLE ID	15PS00711	15PS00718	16PS00804	16PS00806	16PS00812
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	11/05/96	11/05/96	11/05/96
DEPTH (ft)	RESULT TYPE	Tier.II	10.00	18.00	6.00
		Non-Residential	Primary	Primary	Primary
Naphthalene		10000	< 0.25	< 0.25	< 0.25
Sum of Concentrations			0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed					
# = Constituent in more than one test method, highest result reported.					
For RCL PNA	Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
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South Bend, Indiana

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**Analytical Summary - PNAs in Soils**  
**Plant 1 - Former Metal Stamping Operations**  
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**Analytical Summary - PNAs in Soils**  
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**Analytical Summary - PNAs in Soils**  
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**South Bend, Indiana**

Analytical Summary - TPH/DROs in Soils  
**Area 15 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

SITE	DATE	DEPTH (ft.)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRPTier II Non-Residential				6000
14GP011	10/31/96	4.00	Prim	19
14GP011	10/31/96	10.00	Prim	<10
14GP019	11/06/96	6.00	Prim	54
14GP019	11/06/96	11.00	Prim	<10
14GP019	11/06/96	15.00	Prim	<10
14GP024	12/12/96	8.00	Prim	<10
15GP001	11/04/96	4.00	Prim	15
15GP001	11/04/96	10.00	Prim	<10
15GP001	11/04/96	15.00	Prim	11
15GP002	11/04/96	6.00	Prim	<10
15GP002	11/04/96	10.00	Prim	<10
15GP002	11/04/96	15.00	Prim	<10
15GP003	11/04/96	6.00	Prim	<10
15GP003	11/04/96	10.00	Prim	140
15GP003	11/04/96	16.00	Prim	580 PI
15GP004	11/04/96	4.00	Prim	[7000] PI
15GP004	11/04/96	8.00	Prim	<10
15GP004	11/04/96	15.00	Prim	<10
15GP005	11/05/96	6.00	Prim	<10
15GP005	11/05/96	10.00	Prim	4200 PI
15GP005	11/05/96	15.00	Prim	20
15GP006	11/05/96	6.00	Prim	<10
15GP006	11/05/96	10.00	Prim	<10
15GP006	11/05/96	17.00	Prim	<10
15GP007	11/05/96	6.00	Prim	99 PI
15GP007	11/05/96	10.00	Prim	<10
15GP007	11/05/96	18.00	Prim	<10
15GP008	11/05/96	6.00	Prim	<10
15GP008	11/05/96	8.00	Prim	<10
15GP008	11/05/96	15.00	Prim	<10
15GP008	11/05/96	15.00	Dup 1	<10
15GP009	11/06/96	4.00	Prim	<10
15GP009	11/06/96	12.00	Prim	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - TPH/DROs in Soils  
**Area 15 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
<b>1996 VRPTier II Non-Residential</b>				<b>6000</b>
15GP009	11/06/96	16.00	Prim	<10
15GP010	11/06/96	4.00	Prim	<10
15GP010	11/06/96	12.00	Prim	<10
15GP010	11/06/96	15.00	Prim	<10
15GP010	11/06/96	15.00	Dup 1	<10
15GP011	12/12/96	8.00	Prim	<10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils

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## Plant 1 - Former Metal Stamping Operations

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## Voluntary Site Investigation

## AlliedSignal Industrial Complex

South Bend, Indiana

SITE	14GP011	14GP011	14GP011	14GP019	14GP019
SAMPLE ID	14PS01104	14PS01110	14PS01116	14PS01906	14PS01911
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP	10/31/96	10/31/96	10/31/96
DEPTH (ft)	Tier II	4.00	10.00	16.00	6.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Arsenic, Total	438	2	0.81	0.87	9
Barium, Total	10000	32	4.8	6.2	70
Cadmium, Total	730.0	<1	<1	<1	2.5
Chromium, Total		<5	<5	<5	9.3
Copper, Total	1700	4.7	2.3	2.4	11
Lead, Total	400	10	<5	<5	6.5
Mercury, Total	87.60	0.13	0.1	<0.1	<0.1
Nickel, Total	10000	3.3	2.5	2.6	8
Silver, Total	7300	<1	<1	<1	2.1
Zinc, Total	10000	13	7.1	8.1	31
<b>Sum of Concentrations</b>	<b>65.13</b>	<b>17.61</b>	<b>20.17</b>	<b>149.40</b>	<b>16.70</b>

Values represent total concentrations unless noted &lt; =Not detected at indicated reporting limit ... =Not analyzed

For BCL INORG

Concentrations 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Soils  
Plant 1 - Former Metal Stamping Operations

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Voluntary Site Investigation  
AlliedSignal Industrial Complex

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South Bend, Indiana

SITE	14GP019	
SAMPLE ID	14PS01915	
CONSTITUENT (Units in mg/kg)	DATE	1996 VRP
	DEPTH (ft)	Tier II
	RESULT TYPE	Non-Residential Primary
Arsenic, Total	438	0.53
Barium, Total	10000	6.9
Cadmium, Total	730.0	<1
Chromium, Total		<6
Copper, Total	1700	2.4
Lead, Total	400	<5
Mercury, Total	87.60	<0.1
Nickel, Total	10000	2.1
Silver, Total	7300	<1
Zinc, Total	10000	7.3
Sum of Concentrations		19.23
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed		
For RCL INORG	Criteria Comparison 1996 VRP Tier II Non-Residential	

**Analytical Summary - VOCs in Groundwater  
Plant 1 - Former Metal Stamping Operations**

**Voluntary Site Investigation  
AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE	14GP011	14GP031	14GP031	14GP032	15GP005
	SAMPLE ID	1996 VRP	14PW01120	14PW03119	14QD03119	14PW03219
	DATE	Tier II	10/31/96	07/15/97	07/15/97	11/05/96
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Primary
Vinyl chloride	10	<2	[18]	[17]	<2	<2
Toluene	20440	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<5	5.3	<5	<5	<5
1,1-Dichloroethane	10220	<5	100	97	100	57
1,1-Dichloroethene	7	<5	<5	<5	<5	<5
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	<5	9.3	8.3	41	19
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	9198	<5	7.1	6.8	71	15
Tetrachloroethene	56.1	<5	<5	<5	<5	<5
Trichloroethene	260	<5	<5	<5	64	8.1 B
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>139.70</b>	<b>128.80</b>	<b>346.00</b>	<b>99.10</b>

**Analytical Summary - VOCs in Groundwater  
Plant 1 - Former Metal Stamping Operations  
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CONSTITUENT (Units in ug/l)	SITE	15GP006	15GP007	15GP008	15GP013	MW-8
	SAMPLE ID	1996 VRP	15PW00620	15PW00721	15PW00821	15PW01319
	DATE	Tier II	11/05/96	11/05/96	11/05/96	07/15/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	[1300]	<10	<2	<2
Toluene	20440	<5	<130	<6	<5	17
1,2,4-Trimethylbenzene	5.11E+3	<5	<130	<1	<400	<400
1,1-Dichloroethane	10220	41	140	6.7	2700	430
1,1-Dichloroethene	7	<5	<130	<6	<5	<5
1,2-Dichloroethane	31.4	<5	<130	<5	<5	<5
cis-1,2-Dichloroethene	1022	12	[12600]	6.5	[13000]	900
trans-1,2-Dichloroethene	2040	<5	<130	<6	<5	6.7
1,1,1-Trichloroethane	9198	<5	<130	<6	2700	8
Tetrachloroethene	56.1	35	<130	<5	<6	18
Trichloroethene	260	73 B	[380]	17	<6	200
Sum of Concentrations		161.00	4420.00	29.20	18400.00	1584.70

**Analytical Summary - VOCs in Groundwater  
Plant 1 - Former Metal Stamping Operations  
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South Bend, Indiana**

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CITY OF BOSTON, MASSACHUSETTS							
CONSTITUENT (Units in ug/l)	SITE	MW-8	MW-8	S4A	S4A	S4A	
	SAMPLE ID	1996 VRP	MW-8				
	DATE	Tier II	03/18/97	06/05/97	03/12/96	06/04/96	09/05/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	[14]	<2	<2	<2	<2
Toluene		20440	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene		5.11E+3	---	---	<400	<400	---
1,1-Dichloroethane		10220	330	440	23	26	16
1,1-Dichloroethene		7	6.3	<5	<5	6.2	<6
1,2-Dichloroethane		31.4	<5	<5	<6	<5	<6
cis-1,2-Dichloroethene		1022	1000	[1400]	310	250	160
trans-1,2-Dichloroethene		2040	9	<5	14	5.2	<5
1,1,1-Trichloroethane		9198	7.6	<5	<5	<6	<6
Tetrachloroethene		56.1	19	<5	<5	<5	<5
Trichloroethene		260	78	140	10	7.9	<5
<b>Sum of Concentrations</b>			<b>1462.90</b>	<b>1980.00</b>	<b>357.00</b>	<b>293.30</b>	<b>166.00</b>

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ... = Not analyzed

[ ] = Greater than or equal to

For BCL VOCs      Chemical Concentration 1990s VRP T-11 Non-Potential

**Analytical Summary - VOCs in Groundwater**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
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CONSTITUENT (Units in ug/l)	SITE	S4A	S4A	S4A	S4A	S4A	
	SAMPLE ID	1996 VRP					
	DATE	Tier II	12/10/96	03/21/97	06/03/97	09/23/97	12/09/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<10	<2	<10	<10	<10
Toluene	20440	<5	<5	<5	<5.0	<5.0	<5.0
1,2,4-Trimethylbenzene	5.11E+3	---	---	---	---	---	---
1,1-Dichloroethane	10220	<5	<14	<1	<24	<23	<23
1,1-Dichloroethene	7	<5	<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane	31.4	[270]	<5	<5	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	1022	42	210	300	220	210	210
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	9198	<5	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene	56.1	<5	<5	<5	<5.0	<5.0	<5.0
Trichloroethene	260	<5	6.6	<5	<5.0	<5.0	<5.0
Sum of Concentrations		315.10	230.60	331.00	244.00	233.00	

## Analytical Summary - Inorganics in Groundwater

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#### **Plant 1 - Former Metal Stamping Operations**

Date: 08/28/99

## **Voluntary Site Investigation**

AlliedSignal Industrial Comple

**South Bend, Indiana**

**Analytical Summary - Inorganics in Groundwater**  
**Plant 1 - Former Metal Stamping Operations**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
South Bend, Indiana

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Date: 09/29/99

South Bend, Indiana			
CONSTITUENT (Units in µg/l)	SITE	SAMPLE ID	64A
	DATE	Tier II	09/23/97
	RESULT TYPE	Non-Residential	Primary
Cyanide	2044	< 5	
Arsenic, Dissolved (Filtered)	59		
Barium, Dissolved (Filtered)	7154	---	
Copper, Dissolved (Filtered)	3800	---	
Lead, Dissolved (Filtered)	1.50E +1	---	
Nickel, Dissolved (Filtered)	2040	---	
Chromium, Total		---	
Lead, Total		---	
Nickel, Total		---	
Sum of Concentrations	0.00		

**Analytical Summary - VOC in Soils  
Area 17 - Plant 6 CARDOX Building  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

South Bend, Indiana							
	SITE	17GP001	17GP001	17GP001	17GP001	17GP002	
CONSTITUENT	(Units in mg/kg)	SAMPLE ID	17PS00104	17PS00108	17PS00112	17PS00118	17PS00204
DEPTH (ft)	Tier II	4.00	8.00	12.00	16.00	4.00	
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	
Benzene		4.77	<0.1	<0.06	<0.1	[89]	<0.1
Toluene		1000	<0.26	<0.06	<0.26	700	<0.26
Ethyl benzene		1000	<0.26	<0.06	<0.26	280	<0.26
Xylene (total)		1000	<0.26	<0.1	<0.26	720	<0.26
1,2,4-Trimethylbenzene		1.00E+3	<0.26	<0.01	<0.26	<29	<0.26
Sum of Concentrations			0.00	0.00	0.00	1780.00	0.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

= Greater than Action Level

**Analytical Summary - VOC in Soils  
Area 17 - Plant 6 CARDOX Building  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT (Units in mg/kg)	SITE	17GP002	17GP002	17QP003	17GP003	17GP003
	SAMPLE ID	17PS00208	17PS00212	17PS00304	17PS00308	17PS00314
	DEPTH (ft)	Tier II	8.00	12.00	4.00	8.00
Benzene		4.77	<0.1	<0.05 E	<0.1	<0.1
Toluene		1000	<0.25	<0.05 E	<0.25	<0.25
Ethyl benzene		1000	<0.25	<0.05 E	<0.25	<0.25
Xylenes (total)		1000	<0.25	<0.1 E	<0.25	<0.25
1,2,4-Trimethylbenzene		1.00E + 3	<0.25	0.065 J	<0.25	<0.25
Sum of Concentrations			0.00	0.07	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

The following qualifier(s) exist: E, J

For RCL VOC

## **Criteria Comparison 1996 VRP Tier II Non-Residential**

## Analytical Summary - Inorganics in Soils

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Area 17 - Plant 6 CARDOX Building

Date: 09/29/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	17GP001	17GP001	17GP001	17GP001	17GP002
	SAMPLE ID	17PS00104	17PS00108	17PS00112	17PS00118	17PS00204
	DATE	1996 VRP	11/12/96	11/12/96	11/12/96	11/12/96
DEPTH (ft)	Tier II	4.00	8.00	12.00	18.00	4.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	1.7	4.6	0.64	0.67	0.89
Barium, Total	10000	16	22	6.5	6.9	4.9
Cadmium, Total	730.0	<1	<1	<1	<1	<1
Chromium, Total		7	<6	<5	<5	<6
Copper, Total	1700	4.6	4.8	2.9	3	3.1
Lead, Total	400	6	<5	<6	5.4	<5
Mercury, Total	87.60	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel, Total	10000	4.8	6.7	3.4	2.6	4.6
Selenium, Total	7300	<0.5	<0.5	<0.6	<0.6	<0.6
Silver, Total	7300	<1	<1	<1	<1	<1
Zinc, Total	10000	12	12	9.2	8.1	12
Sum of Concentrations		61.10	60.10	22.64	26.67	26.39

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - Inorganics in Soils

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Area 17 - Plant 6 CARDOX Building

Date: 09/29/99

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in mg/kg)	SITE	17GP002	17GP002	17GP003	17GP003	17GP003
	SAMPLE ID	17PS00208	17PS00212	17PS00304	17PS00308	17PS00314
	DATE	1996 VRP	12/13/96	12/13/96	12/16/96	12/16/96
	DEPTH (ft)	Tier II	8.00	12.00	4.00	8.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total	438	0.99	0.47	8.5	1.9	0.60
Barium, Total	10000	5	6.1	89	10	4.8
Cadmium, Total	730.0	<1	<1	3	<1	<1
Chromium, Total		<5	<5	8.7	<5	<5
Copper, Total	1700	2.9	2.8	28	2.8	1.8
Lead, Total	400	<5	<5	50	<5	<5
Mercury, Total	87.60	<0.1	<0.1	2.2	<0.1	<0.1
Nickel, Total	10000	4.8	3.5	9.2	4	2.8
Selenium, Total	7300	<0.6	<0.6	0.76	<0.6	<0.6?
Silver, Total	7300	<1	<1	2	<1	<17
Zinc, Total	10000	13	11	124	11	7.07
Sum of Concentrations		26.49	23.87	325.35	29.70	16.70

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

? = Duplicate records found, Data review required.

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

## Analytical Summary - TPH/DROs in Soils

Area 17 - Plant 6 CARDOX Building

Voluntary Site Investigation

AlliedSignal Industrial Complex

South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT	TPH/DRO
			TYPE	(mg/kg)
1996 VRP Tier II Non-Residential				6000
17GP001	11/12/96	4.00	Prim.	<10
17GP001	11/12/96	12.00	Prim	<10
17GP001	11/12/96	18.00	Prim	[8100] PI
17GP003	12/16/96	4.00	Prim	65
17GP003	12/16/96	8.00	Prim	<10

Values represent total concentrations unless noted &lt; = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level The following qualifier(s) exist: P, I

For RCL TPH/DRO

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Groundwater  
Area 17 - Plant 6 CARDOX Building  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

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Date: 09/29/99

CONSTITUENT	(Units in ug/l)	SITE	17GP001
		SAMPLE ID	1996 VRP
		DATE	Tier II
		RESULT TYPE	Non-Residential Primary
Arsenic, Dissolved (Filtered)	50	21	
Barium, Dissolved (Filtered)	7154	430	
Lead, Dissolved (Filtered)	1.50E+1	4.1	
Sum of Concentrations		465.10	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

For RCL INORG Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 17 - Plant 6 CARDOX Building  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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Date: 09/29/99

CONSTITUENT (Units in ug/l)	SITE	SAMPLE ID	1996 VRP	17PW00120
	DATE	TIER II	11/12/96	
	RESULT TYPE	Non-Residential	Primary	
Benzene	98.6	[15000] J		
Ethylbenzene	10220	2100 J		
Toluene	20440	11000 J		
Xylenes (total)	204400	6500 J		
1,2,4 Trimethylbenzene	5.11E+3	660 J		
1,1-Dichloroethene	10220	2000 J		
cis-1,2-Dichloroethene	1022	[6500] J		
Sum of Concentrations		42660.00		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

J = Greater than Action Level - The following qualifier(s) exist: J

For RCL VOCs

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils  
Area 18/19 - Plant 11 Electroplating/Chromium Exhaust  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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**Analytical Summary - Inorganics in Soils**  
**Area 18/19 - Plant 11 Electroplating/Chromium Exhaust**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT	(Units in mg/kg)	SITE	07GP009	18HA001	18HA002	18HA003	18SS001
		SAMPLE ID		18HA00101			18SS0100
DATE		1996 VRP	12/17/96	10/24/96	12/18/96	12/18/96	11/21/96
DEPTH (ft)		Tier II	12.00	1.00	1.00	1.00	0.00
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Arsenic, Total		438	0.53	---	1.4	0.48	<0.25
Barium, Total		10000	7.5	---	14	7.7	<1
Cadmium, Total		730.0	<1	---	6.1	67	<1
Chromium, Total			<5	1530	68	600	3130007 PI
Chromium (VI)		7300	---	<0.2	---	---	[212000]
Copper, Total		1700	3.6	---	17	32	<1
Lead, Total		400	<5	---	27	<5	<5
Nickel, Total		10000	4.2	---	4.1	4.9	<1
Silver, Total		7300	<17	---	1.17	<17	<17
Zinc, Total		10000	117	---	152	237	<50
Sum of Concentrations			26.83	1530.00	153.70	736.09	626000.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

? = Duplicate records found; Data review required. ! = Greater than Action Level. The following qualifier(s) exist: P, I

For RCL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater  
Area 18/19 - Plant 11 Electroplating/Chromium Exhaust  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method; highest result reported. || = Greater than Action Level ND = Not Detected

For RCL VOCT

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Groundwater**  
**Area 18/19 - Plant 11 Electroplating/Chromium Exhaust**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 09/29/99

CONSTITUENT	(Units in ug/l)	SITE	MW-5
		SAMPLE ID	1996 VRP
		DATE	Tier II
		RESULT TYPE	Non-Residential Primary
Vinyl chloride	10	<10	
Naphthalene	4088		
cis-1,2-Dichloroethane	1022	11	
1,1,1-Trichloroethane	9198	33	
Tetrachloroethane	56.1	8.8	
Trichloroethene	260	18	
Sum of Concentrations		70.80	

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Groundwater  
Area 18/19 - Plant 11 Electroplating/Chromium Exhaust  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/29/99

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL INORG

## Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Soils  
Plant 4 Torque Tube Area  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 09/30/99

CONSTITUENT (Units in mg/kg)	SITE:	GP-03	GP-04	GP-05	GP-06	GP-07
	SAMPLE ID:					
	DATE	1996 VRP	12/07/98	12/07/98	12/07/98	12/07/98
DEPTH (ft)	Tier II	0.00	0.00	0.00	0.00	0.00
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Trichloroethene	25.73	0.11	0.092	<0.06	4.2	0.32
Sum of Concentrations		0.11	0.09	0.00	4.20	0.32

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

East-EGI VOC

## Analytical Summary - VOCs in Soils

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Date: 09/30/99

## Plant 4 Torque Tube Area

### **Voluntary Site Investigation**

AlliedSignal Industrial Complex

**South Bend, Indiana**

SOUTH BEND, INDIANA			
CONSTITUENT	SITE	GP-08	
	SAMPLE ID		
DATE	1996 VRP	12/07/98	
DEPTH (ft)	Tier II	0.00	
RESULT TYPE	Non-Residential	Primary	
Trichloroethene	25.73	0.16	
Sum of Concentrations		0.16	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

## **Criteria Comparison 1995 VRP Tier II Non-Residential**

Analytical Summary - TPH/DROs in Soils  
Plant 4 Torque Tube Area  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

SITE	DATE	DEPTH (ft)	RESULT TYPE	TPH/DRO (mg/kg)
1996 VRP Tier II Non-Residential				6000
GP-03	12/07/98	0.00	Prim	<10
GP-04	12/07/98	0.00	Prim	<10
GP-05	12/07/98	0.00	Prim	<10
GP-06	12/07/98	0.00	Prim	16
GP-07	12/07/98	0.00	Prim	<10
GP-08	12/07/98	0.00	Prim	13

Values represent total concentrations unless noted <= Not detected at indicated reporting limit --- = Not analyzed

For RCL TPH/DRO  
Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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Date: 09/30/99

CONSTITUENT (Units in ug/l)	SITE	01CPT001	01CPT002	01CPT003	01CPT004	01CPT005
	SAMPLE ID	1996 VRP	01CPW00177	01CPW00287	01CPW00297	01CPW00456
	DATE	Tier II	11/19/96	11/19/96	11/19/96	11/21/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<2	<2	<2	<10
Benzene	99.6	<5	<5	<5	<5	<5
Ethylbenzene	10220	<5	<5	<5	<5	<5
Methyl(tert)butyl Ether	6950	<50	<50	<50	<50	<50
Toluene	20440	<5	<5	<5	<5	<5
Xylenes (total)	204400	<5	<5	<5	<5	<10
Acetone	10220	<100	<100	<100	<100	<100
Isopropylbenzene	1.02E+4	<5	<5	<5	<5	<1
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10
Naphthalene	4088	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<5	<5	<5	<5	<1
1,3,5-Trimethylbenzene	5.11E+3	<5	<5	<5	<5	<1
1,1-Dichloroethane	10220	<5	<5	<5	<5	<5
1,1-Dichloroethene	7	<5	<5	<5	<5	<5
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5
1,2-Dichloroethene (Total)						
1,2-Dichloropropane	4.21E+1	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	9198	<6	<6	<6	<5	<5
Tetrachloroethene	56.1	<5	<5	<5	<5	<5
Trichloroethene	260	<5	<5	<5	<5	<5
Chloroethane	9.86E+2	<10	<10	<10	<10	<10
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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Date: 09/30/99

CONSTITUENT (Units in ug/l)	SITE	01CPT005	01CPT008	01CPT008	01CPT008	01CPT009
	SAMPLE ID	1996 VRP	01CPW00585	01CPW00623	01CPW00844	01CQD00844
	DATE	Tier II	12/04/96	12/04/96	12/05/96	12/05/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
						Primary
Vinyl chloride		10	<10	<10	<10	<2
Benzene		98.6	<5	<5	<5	<5
Ethylbenzene		10220	<5	<5	<5	<5
Methyl(tert)butyl Ether		6950	<50	<50	<50	<50
Toluene		20440	<5	<5	<5	<5
Xylene (Total)		204400	<10	<10	<10	<10
Acetone		10220	<100	<100	<100	<100
Isopropylbenzene		1.02E+4	<1	<1	<1	<1
2-Methylnaphthalene		2040.00	<10	<10	<10	<10
Naphthalene		4089	<5	<5	<5	<5
1,2,4-Trimethylbenzene		5.11E+3	<1	18 J	<1	<400
1,3,5-Trimethylbenzene		5.11E+3	<1	<1	<1	<1
1,1-Dichloroethane		10220	<5	<5	<5	<5
1,1-Dichloroethene		7	<5	<5	<5	<5
1,2-Dichloroethane		31.4	<5	<5	<5	<5
cis-1,2-Dichloroethene		1022	<5	<5	760	690
trans-1,2-Dichloroethene		2040	<5	<5	190	160
1,2-Dichloroethene (Total)						
1,2-Dichloropropane		4.21E+1	<5	<5	<5	<5
1,1,1-Trichloroethane		9198	<5	<5	<5	<5
Tetrachloroethene		56.1	<5	<5	<5	<5
Trichloroethene		260	<5	<5	<5	<5
Chloroethane		8.86E+2	<10	<10	<10	<10
Sum of Concentrations		0.00	18.00	950.00	740.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOA

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation

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AlliedSignal Industrial Complex  
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	01CPT009	01CPT009	01CPT009	01CPT009	01CPT009
	SAMPLE ID	1996 VRP	01CPW00988	01CPW00940	01CPW00950	01CPW00980
	DATE	Tier II	12/06/96	07/24/97	07/24/97	07/24/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<1	<1	<1	<1
Benzene	96.6	<6	<1	<1	<1	<1
Ethylbenzene	10220	<6	<1	<1	<1	<1
Methyl(tert)butyl Ether	6950	<50	---	---	---	---
Toluene	20440	<6	<1	<1	<1	<1
Xylene (total)	204400	<10	<3	<3	<3	<3
Acetone	10220	<100	<50	<50	<50	<50
Isopropylbenzene	1.02E+4	<1	---	---	---	---
2-Methylnaphthalene	2040.00	<10	---	---	---	---
Naphthalene	4088	<5	---	---	---	---
1,2,4-Trimethylbenzene	5.11E+3	<1	---	---	---	---
1,3,5-Trimethylbenzene	5.11E+3	<1	---	---	---	---
1,1-Dichloroethane	10220	<6	<1	<1	<1	<1
1,1-Dichloroethene	7	<6	<1	<1	<1	<1
1,2-Dichloroethane	31.4	<6	<1	<1	<1	<1
cis-1,2-Dichloroethene	1022	<6	---	---	---	---
trans-1,2-Dichloroethene	2040	<6	---	---	---	---
1,2-Dichloroethene (Total)			<2	<2	<2	<2
1,2-Dichloropropane	4.21E+1	<6	<1	<1	<1	<1
1,1,1-Trichloroethane	9198	<6	<1	<1	<1	<1
Tetrachloroethene	56.1	<6	<1	<1	<1	<1
Trichloroethene	260	<6	<1	<1	<1	<1
Chloroethane	9.86E+2	<10	<1	<1	<1	<1
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units: $\mu\text{g/l}$ )	SITE	01CPT010	01CPW010	01CPT011	01CPT011	01CPT012
	SAMPLE ID	1996 VRP	01CPW01022	01CPW01070	01CPW01137	01CPW01147
	DATE	Tier II	12/06/96	12/06/96	02/10/97	02/11/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<10	<10	<20	<10
Benzene	98.6	<5	<5	<5	<10	<5
Ethylbenzene	10220	<5	<5	<5	<10	<5
Methyl(tert-butyl) Ether	6950	<50	<50	<50	<100	<50
Toluene	20440	<5	<5	<5	<10	<5
Xylene (total)	204400	<10	<10	<10	<20	<10
Acetone	10220	<100	<100	<100	<200	<100
Isopropylbenzene	1.02E+4	<1	<1	<1	<2	<1
2-Methylnaphthalene	2040.00	<10	<10	<10	<20	<10
Naphthalene	4088	<5	<5	<5	<10	<5
1,2,4-Trimethylbenzene	5.11E+3	<1	<1	<1	<2	<1
1,3,5-Trimethylbenzene	6.11E+3	<1	<1	<1	<2	<1
1,1-Dichloroethane	10220	<5	<5	<5	<10	110
1,1-Dichloroethene	7	<5	<5	<5	<10	[7.8]
1,2-Dichloroethane	31.4	<5	<5	<6	<10	<5
cis-1,2-Dichloroethene	1022	<5	<5	120	350	130
trans-1,2-Dichloroethene	2040	<5	<5	17	58	6.8
1,2-Dichloroethene (Total)						
1,2-Dichloropropane	4.21E+1	<5	<5	<5	<10	<5
1,1,1-Trichloroethane	9198	<5	<5	<5	<10	50
Tetrachloroethene	56.1	<6	<6	<6	<10	<5
Trichloroethene	260	<5	<5	<5	<10	68
Chloroethane	9.86E+2	<10	<10	<10	<20	<10
Sum of Concentrations		0.00	0.00	137.00	408.00	372.60

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

(I) = Greater than Action Level

FCRCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in ug/l)	SITE	01CPT012	01CPW01240	01CPW01250	01CPW01322	01CPW01331
	SAMPLE ID	1996 VRP	01QD01230			
	DATE	Tier II	02/12/97	02/12/97	02/12/97	02/13/97
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Vinyl chloride	10	<20	<20	161	<10	<10
Benzene	98.6	<10	<10	<5	<5	<5
Ethylbenzene	10220	<10	<10	<5	<5	<5
Methyl tert-butyl Ether	6950	<100	<100	<50	<60	<50
Toluene	20440	<10	<10	<5	<5	<5
Xylene (total)	204400	<20	<20	<10	<10	<10
Acetone	10220	<200	<200	<100	<100	<100
Isopropylbenzene	1.02E+4	<2	<2	<1	<1	<1
2-Methylnaphthalene	2040.00	<20	<20	12	<10	<10
Naphthalene	4088	<10	<10	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<2	<2	1.6	<1	<1
1,3,5-Trimethylbenzene	5.11E+3	<2	<2	<1	<1	<1
1,1-Dichloroethene	10220	97	100	<5	<5	<5
1,1-Dichloroethane	7	<10	<10	<5	<5	<5
1,2-Dichloroethane	31.4	<10	<10	<5	<5	<5
cis-1,2-Dichloroethene	1022	230	240	6.4	25	61
trans-1,2-Dichloroethane	2040	34	39	<5	55	120
1,2-Dichloroethene (Total)						
1,2-Dichloropropane	4.21E+1	<10	<10	<5	<5	<5
1,1,1-Trichloroethane	9198	<10	<10	<5	<5	<5
Tetrachloroethene	56.1	<10	<10	<5	<5	<5
Trichloroethene	260	14	16	<5	56	81
Chloroethane	9.86E+2	<20	<20	<10	<10	<10
Sum of Concentrations		375.00	395.00	96.00	136.00	189.10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level

For RCL VOC1

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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE SAMPLE ID	01CPT013 01CPW01345	01CPT014 01CPW01425	01CPT014 01CPW01436	01CPT014 01CQD01435	01CPT014 01CPW01445
	DATE RESULT TYPE	Tier II Non-Residential	Primary	Primary	Primary	Duplicate 1
Vinyl chloride		10	<10	<1	<1	<1
Benzene		98.6	<5	<1	<1	<1
Ethylbenzene		10220	<5	<1	<1	<1
Methyl(tert)butyl Ether		6950	<50	...	...	...
Toluene		20440	<5	1.3	<1	<1
Xylenes (total)		204400	<10	<3	<3	<3
Acetone		10220	<100	62	<50	<50
Isopropylbenzene		1.02E+4	<1	...	...	...
2-Methylnaphthalane		2040.00	<10	...	...	...
Naphthalene		4088	<5	...	...	...
1,2,4-Trimethylbenzene		5.11E+3	<1	...	...	...
1,3,5-Trimethylbenzene		5.11E+3	<1	...	...	...
1,1-Dichloroethane		10220	<5	<1	<1	<1
1,1-Dichloroethene		7	<5	<1	<1	<1
1,2-Dichloroethane		31.4	<5	<1	<1	<1
cis-1,2-Dichloroethene		1022	<5	...	...	...
trans-1,2-Dichloroethene		2040	<5	...	...	...
1,2-Dichloroethene (Total)		...	...	<2	<2	<2
1,2-Dichloropropane		4.21E+1	<5	<1	<1	<1
1,1,1-Trichloroethane		9198	<5	<1	<1	<1
Tetrachloroethane		66.1	<5	<1	<1	<1
Trichloroethene		260	<5	<1	<1	<1
Chloroethane		8.86E+2	<10	<1	<1	<1
Sum of Concentrations		0.00	69.30	0.00	0.00	0.00

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For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT	SITE (Units in ug/l)	SITE	01CPT014	01CPT014	01CPT014	01CPT014	01CPT015	
		SAMPLE ID	1996 VRP	01CPW01455	01CPW01465	01CPW01493	01CPW01478	01CPW01584
		DATE	Tier II	07/23/97	07/24/97	07/24/97	07/24/97	07/22/97
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	<1	<1	<1	<1	<1	<1
Benzene		98.6	<1	<1	<1	<1	<1	<1
Ethylbenzene		10220	<1	<1	<1	<1	<1	<1
Methyl(tert)butyl Ether		6950	---	---	---	---	---	---
Toluene		20440	<1	<1	<1	<1	<1	<1
Xylene (total)		204400	<3	<3	<3	<3	<3	<3
Acetone		10220	<50	<50	<50	<50	<50	<50
Isopropylbenzene		1.02E+4	---	---	---	---	---	---
2-Methylnaphthalene		2040.00	---	---	---	---	---	---
Naphthalene		4088	---	---	---	---	---	---
1,2,4-Trimethylbenzene		5.11E+3	---	---	---	---	---	---
1,3,5-Trimethylbenzene		6.11E+3	---	---	---	---	---	---
1,1-Dichloroethane		10220	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		7	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane		31.4	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene		1022	---	---	---	---	---	---
trans-1,2-Dichloroethene		2040	---	---	---	---	---	---
1,2-Dichloroethene (Total)		7	<2	<2	<2	<2	<2	<2
1,2-Dichloropropane		4.21E+1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane		9196	<1	<1	<1	<1	<1	<1
Tetrachloroethene		66.1	<1	<1	<1	<1	<1	<1
Trichloroethene		260	<1	<1	<1	<1	<1	<1
Chloroethane		9.86E+2	<1	<1	<1	<1	<1	<1
Sum-of-Concentrations		0.00	0.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in ug/l)	SITE	01CPT015	01CPT015	01CPT018	01CPT016	01CPT016
	SAMPLE ID	1996 VRP	01CPW01564	01CPW01574	01CPW01631	01CPW01643
	DATE	Tier II	07/23/97	07/23/97	07/26/97	07/26/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<1	<1	<1	4.2	[140]
Benzene	38.6	<1	<1	42	46	<100
Ethylbenzene	10220	<1	<1	1.7	<1	<100
Methyl(tertbutyl) Ether	6950	...	...	...	...	...
Toluene	20440	<1	<1	<1	<1	<100
Xylene (Total)	204400	<3	<3	<3	<3	<300
Acetone	10220	<50	<50	<50	<50	<5000
Isopropylbenzene	1.02E+4	...	...	...	...	...
2-Methylnaphthalene	2040.00	...	...	...	...	...
Naphthalene	4088	...	...	...	...	...
1,2,4-Trimethylbenzene	5.11E+3	...	...	...	...	...
1,3,5-Trimethylbenzene	5.11E+3	...	...	...	...	...
1,1-Dichloroethane	10220	<1	<1	<1	6.2	<100
1,1-Dichloroethene	7	<1	<1	<1	<1	<100
1,2-Dichloroethane	31.4	<1	<1	<1	6.0	[6300]
cis-1,2-Dichloroethene	1022	...	...	...	...	...
trans-1,2-Dichloroethene	2040	...	...	...	...	...
1,2-Dichloroethene (Total)	42.1	<2	<2	6.0	36	[240]
1,2-Dichloropropane	4.21E+1	<1	<1	<1	<1	[150]
1,1,1-Trichloroethane	9198	<1	<1	<1	<1	<100
Tetrachloroethene	56.1	<1	<1	2.0	<1	<100
Trichloroethene	260	<1	<1	1.1	2.3	<100
Chloroethane	9.86E+2	<1	<1	3.7	<1	<100
Sum of Concentrations	...	0.00	0.00	56.50	100.70	6830.00

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[I] = Greater than Action Level

For RCL VOC1 Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in ug/l)	SITE	01CPT016	01GP001	01GP002	01GP003	01GP004
	SAMPLE ID	1996 VRP	01CQD01655	01PW00121	01PW00221	01PW00321
	DATE	Tier II	07/25/97	11/05/96	11/05/96	11/06/96
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Vinyl chloride	10	[110]	<10	[36]	[66]	<2
Benzene	98.6	<100	<5	<5	<25	<5
Ethylbenzene	10220	<100	<5	<5	<25	<5
Methyl(tert)butyl Ether	6950		<50	<50	<250	<50
Toluene	20440	<100	<5	<5	<25	<5
Xylene (total)	204400	<300	<10	<6	<25	<5
Acetone	10220	<5000	<100	---	---	---
Isopropylbenzene	1.02E+4		<1	<6	<25	<5
2-Methylnaphthalene	2040.00	---	<10	<10	<50	<10
Naphthalene	4088		<5	<6	<25	<5
1,2,4-Trimethylbenzene	5.11E+3	---	<1	<5	<25	<5
1,3,5-Trimethylbenzene	5.11E+3	---	<1	<5	<25	<5
1,1-Dichloroethane	10220	<100	33	<5	340	<5
1,1-Dichloroethene	7	<100	<5	<5	<25	<5
1,2-Dichloroethane	31.4	[6300]	<5	<5	<25	<5
cis-1,2-Dichloroethene	1022		12	<5	260	41
trans-1,2-Dichloroethene	2040	---	<5	<5	<25	<5
1,2-Dichloroethene (Total)		230	---	---	---	---
1,2-Dichloropropane	4.21E+1	[160]	<5	---	---	---
1,1,1-Trichloroethene	9198	<100	<5	<5	150	<5
Tetrachloroethene	56.1	<100	<5	<5	<25	<5
Trichloroethene	260	<100	9.9	<5	[650]	<5
Chloroethane	9.86E+2	<100	<10	---	---	---
Sum of Concentrations		6800.00	54.90	36.00	1366.00	41.00
<hr/>						
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
[ ] = Greater than Action Level						
For RCL VOC1						
Criteria Comparison 1996 VRP Tier II Non-Residential						

**Analytical Summary - VOCs in Groundwater**  
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CONSTITUENT (Units: in. ug/l)	SITE	O1GP005	O2GP001	O3GP006	O3GP008	O3GP011
	SAMPLE ID	1996 VRP	O1PW00517	O2PW00119	O3PW00521	O3PW0620
	DATE	Tier II	11/17/96	11/16/96	10/26/96	10/01/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	[19]	<2	<10	<2	<2
Benzene	98.6	<5	8.9	<5	<5	<5
Ethylbenzene	10220	<5	0.5	<5	<5	<5
Methyl(tert)butyl Ether	6950	<50	<50	<50	<50	<50
Toluene	20440	<6	<5	<5	<5	<5
Xylene (total)	204400	<6	<5	<10	<5	<5
Acetone	10220	...	...	<100	...	...
Isopropylbenzene	1.02E+4	<5	14	<1	<5	<5
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10
Naphthalene	4088	14	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<5	11	<1	<5	<5
1,3,5-Trimethylbenzene	5.11E+3	<5	<5	<1	<5	<5
1,1-Dichloroethane	10220	<5	<5	<5	<5	<5
1,1-Dichloroethene	7	<5	<5	<5	<5	<5
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	100	<5	<5	<5	<5
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5
1,2-Dichloroethene (Total)	...	...	...	...	...	...
1,2-Dichloropropane	4.21E+1	...	...	<5	...	...
1,1,1-Trichloroethane	9.798	<5	<5	<5	<5	<5
Tetrachloroethene	56.1	<5	<5	<5	<5	<5
Trichloroethene	280	<5	<5	<5	180	<5
Chloroethane	9.86E+2	...	...	<10	...	...
<b>Sum of Concentrations</b>		<b>133.00</b>	<b>43.40</b>	<b>0.00</b>	<b>180.00</b>	<b>0.00</b>

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|| = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units: µg/l)	SITE	03GP012	03GP024	03GP025	03GP026	03GP028
	SAMPLE ID	1996 VRP	03PW1223	03PW02418	03PW02518	03PW02618
	DATE	Tier II	10/02/96	10/29/96	10/29/96	10/30/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	[130]	<2	9.9	[16]
Benzene	98.6	<5	<5	<5	<5	<5
Ethylbenzene	10220	<5	120	<5	<5	<5
MethylTertbutyl Ether	6950	<50	130	<50	<50	<50
Toluene	20440	<5	<5	<5	<5	<5
Xylenes (total)	204400	<5	<5	<5	<5	<5
Acetone	10220	---	---	---	---	---
Isopropylbenzene	1.02E+4	<5	90	<5	<5	<5
2-Methylnaphthalene	2040.00	<10	20	<10	<10	<10
Naphthalene	4088	<5	20	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<400	62	<5	<5	<5
1,3,5-Trimethylbenzene	6.11E+3	<5	<5	<5	<5	<5
1,1-Dichloroethane	10220	<5	60	<5	<5	<5
1,1-Dichloroethene	7	<5	[15]	<5	<5	<5
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	100	200	<5	<5	<5
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5
1,2-Dichloroethene (Total)	7	---	---	---	---	---
1,2-Dichloropropane	4.21E+1	---	---	---	---	---
1,1,1-Trichloroethane	9198	17	84	<5	<5	<5
Tetrachloroethene	56.1	<5	<5	<5	<5	<5
Trichloroethene	260	<5	[160.8]	<5	<5	<5
Chloroethane	9.86E+2	---	---	---	---	---
Sum of Concentrations		117.00	1101.00	0.00	9.90	16.00

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[I] = Greater than Action Level

For RCL VOC1

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CONSTITUENT (Units in ug/l)	SITE	03GP029	03GP038	04GP001	04GP004	05GP048
	SAMPLE ID	1996 VRP	03PW02916	03PW03622	04PW00120	04PW00421
	DATE	Tier II	04/22/97	04/23/97	10/22/96	10/23/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<2	<10	<10	<2000
Benzene	98.6	<5	<5	<5	<5	<5000
Ethylbenzene	10220	<5	<5	<5	190 J	<5000
Methyltertbutyl Ether	6950	<50	<50	<50	<50	<50000
Toluene	20440	34	<5	<5	<5	<5000
Xylene (total)	204400	<5	<5	<10	190 J	<5000
Acetone	10220	<100	<100	<100	<100	---
Isopropylbenzene	1.02E+4	<5	<5	<1	110 J	<5000
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10000
Naphthalene	4088	<5	<5	<5	<5	<5000
1,2,4-Trimethylbenzene	5.11E+3	<5	<5	<1	<1	<5000
1,3,5-Trimethylbenzene	5.11E+3	<5	<5	<1	4 J	<5000
1,1-Dichloroethane	10220	<5	<5	<6	<6	<5000
1,1-Dichloroethene	7	[100]	<5	<5	<6	<5000
1,2-Dichloroethane	31.4	<5	<5	<5	10 J	<5000
cis-1,2-Dichloroethene	1022	[1200]	<5	<5	<5	[88000]
trans-1,2-Dichloroethene	2040	43	<5	<5	<5	<5000
1,2-Dichloroethene (Total)						
1,2-Dichloropropane	4.21E+1	<5	<5	<5	<5	---
1,1,1-Trichloroethene	9198	540	<5	<5	<5	<5000
Tetrachloroethene	56.1	<5	<5	<5	<6	<5000
Trichloroethene	260	[1400]	<5	<5	<5	[13000]
Chloroethane	9.86E+2	<10	<10	<10	<10	---
Sum of Concentrations		3817.00	0.00	0.00	604.00	101000.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

J = Greater than Action Level

For RCL VOC

Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	05GP049	05GP052	05GP054	05GP055	05GP057
	SAMPLE ID	1996 VRP	05PW04920	05PW05219	05PW05421	05PW05518
	DATE	Tier II	11/12/96	11/12/96	11/13/96	11/13/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	< 500	< 20	< 10	< 2	< 10
Benzene	98.6	< 1300	68 J	< 5	< 5	< 5
Ethylbenzene	10220	1500 J	< 50 UJ	< 5	< 6	< 5
Methyl(tert)butyl Ether	6950	< 13000	< 500	< 50	< 50	< 50
Toluene	20440	< 1300	100 J	< 5	< 5	< 5
Xylene (Total)	204400	7400 J	81 J	< 10	< 5	< 10
Acetone	10220	---	---	< 100	---	< 100
Isopropylbenzene	1.02E+4	< 1300	86 J	< 1	< 5	< 1
2-Methylnaphthalene	2040.00	< 2500	< 100	< 10	< 10	< 10
Naphthalene	4088	1700 J	< 50	< 5	< 5	< 5
1,2,4-Trimethylbenzene	5.11E+3	< 1300	340 J	19	< 5	< 1
1,3,5-Trimethylbenzene	5.11E+3	< 1300	< 50	< 1	< 5	< 1
1,1-Dichloroethene	10220	< 1300	< 50	< 5	< 6	12
1,1-Dichloroethene	7	< 1300	< 50	< 5	< 5	< 5
1,2-Dichloroethene	31.4	< 1300	< 50	< 5	< 6	< 5
cis-1,2-Dichloroethene	1022	< 1300	< 50	< 5	< 6	< 5
trans-1,2-Dichloroethene	2040	< 1300	< 50	< 5	< 6	< 5
1,2-Dichloroethene (Total)	4.21E+1	---	---	---	---	---
1,2-Dichloropropane	9198	< 1300	< 50	< 5	---	< 5
1,1,1-Trichloroethane	56.1	< 1300	< 50	< 5	< 5	< 5
Tetrachloroethene	260	< 1300	< 50 UJ	< 5	< 5	< 5
Chloroethane	9.86E+2	---	---	< 10	---	< 10
Sum of Concentrations	10600.00	675.00	19.00	0.00	42.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOCs

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases

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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

CONSTITUENT (Units: in ug/l)	B SITE	05GP060	05GP063	05GP065	06GP069	06GP071	
	SAMPLE ID	1996 VRP	05PW06021	05PW06320	05PW06520	05PW06920	06PW07119
	DATE	Tier II:	11/14/96	11/16/96	12/17/96	12/13/96	12/09/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	
Vinyl chloride	10	< 10	< 200	< 20	3.4	[23]	
Benzene	98.6	< 5	[1600]	< 50	9.7	< 5	
Ethylbenzene	10220	< 5	2900	< 50	< 5	< 5	
Methyl(tert-butyl) Ether	6950	< 50	< 5000	< 500	< 50	< 50	
Toluene	20440	< 5	2400	< 50	< 5	< 5	
Xylene (total)	204400	< 10	8700	78	< 5	12.8	
Acetone	10220	< 100	---	---	< 100	---	
Isopropylbenzene	1.02E+4	< 1	< 500	68	< 5	< 5	
2-Methylnaphthalene	2040.00	< 10	< 1000	< 100	< 10	< 10	
Naphthalene	4088	< 5	< 500	< 50	< 5	< 5	
1,2,4-Trimethylbenzene	5.11E+3	< 1	1600	200	< 400	5.4	
1,3,5-Trimethylbenzene	5.11E+3	< 1	< 500	< 50	< 5	< 5	
1,1-Dichloroethane	10220	< 5	< 500	< 50	7.0	< 5	
1,1-Dichloroethene	7	< 5	< 500	< 50	< 5	< 5	
1,2-Dichloroethene	31.4	< 5	< 500	< 50	< 5	< 5	
cis-1,2-Dichloroethene	1022	< 5	< 500	< 50	9.2	4.3	
trans-1,2-Dichloroethene	2040	< 5	< 500	< 50	< 5	7.9	
1,2-Dichloroethane (Total)	...	...	...	...	...	...	
1,2-Dichloropropane	4.21E+1	< 5	---	---	< 5	---	
1,1,1-Trichloroethane	9198	< 5	< 500	< 50	< 5	< 5	
Tetrachloroethene	66.1	< 5	< 500	< 50	< 5	< 5	
Trichloroethene	260	< 5	< 500	< 50	< 5	210	
Chloroethane	9.86E+2	< 10	---	---	< 10	---	
Sum of Concentrations	...	0.00	17100.00	346.00	29.30	301.30	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

(I) = Greater than Action Level

For RPL VOC1

Criteria Comparison: 1996 VOC Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases

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Voluntary Site Investigation

Date: 09/30/99

AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	06GP003	06GP004	06GP005	07GP005	08GP002
	SAMPLE ID	1996 VRP	06PW00320	06PW00420	06PW00521	07PW00521
	DATE	Tier II	11/12/96	11/13/96	11/13/96	10/06/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	<10	<10	<10	<10
Benzene		98.6	<5	<5	<5	<5
Ethylbenzene		10220	<5	<5	<5	<5
Methyl[tert]butyl Ether		6950	<50	<50	<50	<50
Toluene		20440	<5	<5	<5	<5
Xylenes (total)		204400	<10	<10	<10	<10
Acetone		10220	<100	<100	<100	<100
Isopropylbenzene		1.02E+4	<1	<1	<1	<1
2-Methylnaphthalene		2040.00	<10	<10	<10	<10
Naphthalene		4088	<5	<5	<5	<5
1,2,4-Trimethylbenzene		6.11E+3	<1	<1	<1	7.6
1,3,5-Trimethylbenzene		6.11E+3	<1	<1	<1	3.1
1,1-Dichloroethane		10220	<5	5.3	<5	230
1,1-Dichloroethene		7.	<5	<5	<5	<5
1,2-Dichloroethane		31.4	<5	<5	<5	<5
cis-1,2-Dichloroethene		1022	190	<5	20	140
trans-1,2-Dichloroethene		2040	<5	<5	<5	<5
1,2-Dichloroethene (Total)				...	...	
1,2-Dichloropropane		4.21E+1	<5	<5	<5	<5
1,1,1-Trichloroethane		9188	<5	<5	<5	100
Tetrachloroethene		56.1	<5	<5	<5	<5
Trichloroethene		260	81.1	<5	21	<5
Chloroethane		9.86E+2	<10	<10	<10	38
Sum of Concentrations		271.00	5.30	41.00	161.60	518.70

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ... = Not analyzed

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE	O8GP003	O8GP004	O8GP005	O8GP006	O8GP007
	SAMPLE ID	1996 VRP	O8PW00319	O8PW00422	O8PW00518	O8PW00618
	DATE	Tier II	10/08/96	10/08/96	10/09/96	10/09/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<10	<2	<2	<2
Benzene	99.6	<5	<5	<5	<5	<5
Ethylbenzene	10220	<5	<5	<5	<5	<5
Methyl(tertbutyl) Ether	6950	<50	<50	<50	<50	<50
Toluene	20440	<5	<5	<5	<5	<5
Xylenes (total)	204400	<5	<10	<5	<5	<5
Acetone	10220	---	<100	---	---	---
Isopropylbenzene	1.02E+4	<5	<1	<5	<5	<5
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10
Naphthalene	1088	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<5	<1	<1	<1	<1
1,3,5-Trimethylbenzene	5.11E+3	<5	<1	<5	<5	<5
1,1-Dichloroethane	10220	94	<5	44	<5	<5
1,1-Dichloroethene	7	<5	<5	<5	<5	<5
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5
1,2-Dichloroethene (Total)		---	---	---	---	---
1,2-Dichloropropane	4.21E+1	---	<5	---	---	---
1,1,1-Trichloroethane	9198	30	<5	72	<5	<5
Tetrachloroethene	56.1	<5	<5	<5	<5	<5
Trichloroethene	260	20 B	<5	78.8	<5	<5
Chloroethane	9.86E+2	---	<10	---	---	---
Sum of Concentrations		144.00	0.00	194.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For PCL VOC1

Criteria Comparison 1996 VOC Tier I Non-Residential

Analytical Summary—VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	06GP008 1996 VRP	06GP009 08PW00821	06GP010 08PW00920	06GP012 08PW01018	06GP012 08PW01219
	DATE	Tier II	10/14/96	10/21/96	10/21/96	10/22/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate
Vinyl chloride		10	[25]	<2	<10	<2
Benzene		98.6	<5	<5	<25	<5
Ethylbenzene		10220	<5	<5	280	<5
Methyl(tert)butyl Ether		6950	<50	<50	<250	<50
Toluene		20440	<5	<5	<25	<5
Xylene (total)		204400	<5	<5	190	<5
Acetone		10220	<100	---	---	---
Isopropylbenzene		1.02E+4	<5	<5	100	<5
2-Methylnaphthalene		2040.00	<10	13	<50	<10
Naphthalene		4088	<5	14	<25	<5
1,2,4-Trimethylbenzene		5.11E+3	<400	5.1	340	<5
1,3,5-Trimethylbenzene		5.11E+3	<5	<5	29	<5
1,1-Dichloroethane		10220	<5	<5	<25	<5
1,1-Dichloroethene		7	<5	<5	<25	<5
1,2-Dichloroethane		31.4	<5	<5	<25	<5
cis-1,2-Dichloroethene		1022	<5	8.8	<25	<5
trans-1,2-Dichloroethene		2040	<5	<5	<25	<5
1,2-Dichloroethane (Total)						---
1,2-Dichloropropane		4.21E+1	<5	---	---	---
1,1,1-Trichloroethane		9198	<5	<5	<25	<5
Tetrachloroethene		56.1	<5	<5	<25	<5
Trichloroethene		260	<5	<5	<25	<5
Chloroethane		9.86E+2	<10	---	---	---
<b>Sum of Concentrations</b>			<b>25.00</b>	<b>40.90</b>	<b>939.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

|| = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE	09GP002	09GP004	09GP005	09GP006	09GP007
	SAMPLE ID	1996 VRP	09PW00421	09PW00621	09PW00620	09PW00720
	DATE	Tier II	11/17/96	07/16/97	07/16/97	07/17/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<200	[850]	[47]	<10	<2
Benzene	98.6	[6500]	<500	[930]	<25	<5
Ethylbenzene	10220	<500	<500	<50	<25	<5
Methyl(tertbutyl) Ether	6950	<5000	<5000	<500	<250	<50
Toluene	20440	<500	<500	<50	<25	<5
Xylenes (Total)	204400	<500	<500	<50	<25	<5
Acetone	10220	<10000	<10000	<1000	<500	<100
Isopropylbenzene	4.02E+4	<500	<500	<50	<25	<5
2-Methylnaphthalene	2040.00	<1000	<1000	<100	<50	<10
Naphthalene	4088	<500	<500	<50	<25	<5
1,2,4-Trimethylbenzene	5.11E+3	<500	<500	<50	<25	<5
1,3,5-Trimethylbenzene	5.11E+3	<500	<500	<50	<25	<5
1,1-Dichloroethane	10220	<500	<500	<50	40	<5
1,1-Dichloroethene	7.1	<500	<500	<50	<25	<5
1,2-Dichloroethane	31.4	<500	<500	<50	<25	<5
cis-1,2-Dichloroethene	1022	<500	[4200]	<50	57	<5
trans-1,2-Dichloroethene	2040	<500	<500	<50	<25	<5
1,2-Dichloroethene (Total)		...	...	...	...	...
1,2-Dichloropropane	4.21E+1	<500	<500	<50	<25	<5
1,1,1-Trichloroethane	9198	<500	<500	<50	<25	18
Tetrachloroethene	56.1	<500	<500	<50	<25	<5
Trichloroethene	260	<500	[6100]	<50	[340]	120
Chloroethane	9.86E+2	<1000	<1000	<100	<50	<10
Sum of Concentrations		6500.00	11160.00	977.00	437.00	138.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level

For PCL VOC1

Criteria Compared: 1996 VRP Tier I Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in µg/l)	SITE	09GP008	10GP001	11GP001	11GP003	11GP006
	SAMPLE ID	1996 VRP	09PW00820	10PW00122	11PW0115	11PW00316
	DATE	Tier II	07/18/97	11/14/96	10/03/96	10/04/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	[410]	< 10	< 100	< 10	[130]
Benzene	98.6	[870]	< 5	< 250	< 5	< 5
Ethylbenzene	10220	540	< 5	< 250	6.4	< 5
Methyl(tert)butyl Ether	6950	< 500	< 50	< 2500	< 50	< 50
Toluene	20440	200	< 5	< 250	< 5	< 5
Xylene (total)	204400	630	< 10	< 250	< 10	< 10
Acetone	10220	< 1000	< 100	---	< 100	< 100
Isopropylbenzene	1.02E+4	280	< 1	< 250	< 1	< 1
2-Methylnaphthalene	2040.00	< 100	< 10	< 500	< 10	< 10
Naphthalene	4088	80	< 5	< 250	< 5	< 5
1,2,4 Trimethylbenzene	5.11E+3	140	< 1	< 20000	< 1	< 1
1,3,5 Trimethylbenzene	5.11E+3	65	< 1	< 250	< 1	< 1
1,1-Dichloroethane	10220	< 50	< 5	< 250	7.7	25
1,1-Dichloroethane	7	< 50	< 5	< 250	< 5	< 5
1,2-Dichloroethane	31.4	< 50	< 5	< 250	< 5	< 5
cis-1,2-Dichloroethene	1022	370	< 16	[2600]	< 5	79
trans-1,2-Dichloroethene	2040	< 50	< 5	< 250	< 5	< 5
1,2-Dichloroethene (Total)						
1,2-Dichloropropane	4.21E+1	< 50	< 5	---	< 5	< 5
1,1,1-Trichloroethane	9198	< 50	< 5	440	< 5	24
Tetrachloroethene	56.1	< 50	< 5	< 250	< 5	< 5
Trichloroethane	260	[300]	75	< 250	< 5	< 5
Chloroethane	9.86E+2	< 100	< 10	---	< 10	< 10
Sum of Concentrations		3885.00	91.00	2940.00	14.10	258.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT	SITE	11GP009	12GP001	13GP001	13GP003	13GP004
	SAMPLE ID	1996 VRP	11PW0091B	12PW00121	13PW00119	13PW00319
	DATE	Tier II	11/13/96	11/12/96	10/23/96	11/01/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	[20]	<10	<10	<260
Benzene		98.6	<5	<5	<5	<5
Ethylbenzene		10220	<5	<5	<5	<5
Methyl(tert)butyl-Ether		6950	<50	<50	<50	<50
Toluene		20440	<5	<5	<5	<5
Xylene (total)		204400	<10	<10	<10	<10
Acetone		10220	<100	<100	<100	<100
Isopropylbenzene		1.02E+4	<1	<1	<1	<1
2-Methylnaphthalene		2040.00	<10	<10	<10	<10
Naphthalene		4088	<5	<5	<5	<5
1,2,4-Trimethylbenzene		5.11E+3	<1	<1	<1	<1
1,3,5-Trimethylbenzene		5.11E+3	<1	<1	<1	<1
1,1-Dichloroethane		10220	26	13	<5	1300
1,1-Dichloroethene		7	<5	<5	<5	[180]
1,2-Dichloroethane		31.4	7.6	<5	<5	<5
cis-1,2-Dichloroethene		1022	310	130	<5	380
trans-1,2-Dichloroethene		2040	<5	<5	<5	<5
1,2-Dichloroethene (Total)						
1,2-Dichloropropane		4.21E+1	<5	<5	<5	<5
1,1,1-Trichloroethane		9198	56	93	<5	2700
Tetrachloroethene		56.1	<5	<5	<5	<5
Trichloroethene		260	<5	160	<5	12100
Chloroethane		9.86E+2	<10	<10	<10	<260
Sum of Concentrations			419.60	386.00	0.00	6660.00
						362.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

(I) = Greater than Action Level

For PGL VOC

Criteria Company 986 Non-Tier Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 · On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT	SITE	13GP004	13GP005	13GP006	13GP008	14GP003
	SAMPLE ID	1996 VRP	13QD00419	13PW00520	13PW00620	13QD00820
	DATE	Tier II	11/01/96	11/03/96	11/15/96	11/15/96
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Duplicate 1	Primary
Vinyl chloride	10	<10	<100	<2	<2	<10
Benzene	98.6	<5	<50	<5	<5	<5
Ethylbenzene	10220	<5	<50	<6	<6	<6
Methyl(tert)butyl Ether	6950	<50	<500	<50	<50	<50
Toluene	20440	<5	<50	<5	<6	<6
Xylenes (total)	204400	<10	<100	<5	<6	<10
Acetone	10220	<100	<1000	<100	<100	<100
Isopropylbenzene	1.02E+4	<1	<10	<5	<5	<1
2-Methylnaphthalene	2040.00	<10	<100	<10	<10	<10
Naphthalene	4088	<5	<50	<5	<5	<5
1,2,4-Trimethylbenzene	6.11E+3	<1	<10	<5	<6	<1
1,3,5-Trimethylbenzene	6.11E+3	<1	<10	<5	<6	<1
1,1-Dichloroethane	10220	29	<50	190 J	<6	33 J
1,1-Dichloroethene	7	<5	<50	<5	<6	<5
1,2-Dichloroethane	31.4	<5	<50	<5	<6	<6
cis-1,2-Dichloroethene	1022	<5	<50	160 J	<6	400 J
trans-1,2-Dichloroethene	2040	<5	<50	<5	<6	<6
1,2-Dichloroethene (Total)						
1,2-Dichloropropane	4.21E+1	<5	<50	<5	<6	<5
1,1,1-Trichloroethane	9186	<5	<50	250	280	<5
Tetrachloroethene	56.1	<5	<50	<5	<6	<6
Trichloroethene	260	<5	1960 J	11500 J	11600 J	130 J
Chloroethane	9.86E+2	300	<100	<10	<10	<10
Sum of Concentrations		329.00	960.00	2080.00	1890.00	663.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

J = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	14GP004	14GP009	14GP011	14GP021	14GP028
	SAMPLE ID	1996 VRP	14PW00419	14PW00921	14PW01120	14PW02119
	DATE	Tier II	10/29/96	10/30/96	10/31/96	12/09/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	7	[39]	<2	<2	[32]
Benzene	98.6	<6	<6	<6	<6	<6
Ethylbenzene	10220	<6	<6	<6	<6	<6
Methyltertbutyl Ether	6950	<60	<60	<60	<60	<60
Toluene	20440	<6	<6	<5	<5	17
Xylenes (total)	204400	<6	<6	<6	6.5 JB	<6
Acetone	10220	---	---	---	---	---
Isopropylbenzene	1.02E+4	<6	<6	<6	<6	<6
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10
Naphthalene	4988	<6	<6	<6	<6	<6
1,2,4-Trimethylbenzene	6.11E+3	<6	<6	<6	<6	<6
1,3,5-Trimethylbenzene	6.11E+3	<6	<6	<6	<6	<6
1,1-Dichloroethane	10220	68	210	<5	<5	6.3
1,1-Dichloroethene	7	<6	[12]	<6	<6	<6
1,2-Dichloroethane	31.4	<6	<6	<5	<5	<5
cis-1,2-Dichloroethene	1022	200	76	<5	20	5.8
trans-1,2-Dichloroethene	2040	5.3	<5	<5	<5 JJ	<5
1,2-Dichloroethene (Total)	4.21E+1	---	---	---	---	---
1,2-Dichloropropane	9188	27	[270]	<5	<5	<5
1,1,1-Trichloroethane	56.1	<5	<5	<5	<5	<5
Tetrachloroethene	260	160 B	[370]	<5	140	20
Trichloroethene	9.86E+2	---	---	---	---	---
Chloroethane						
<b>Sum of Concentrations</b>		<b>467.30</b>	<b>977.00</b>	<b>0.00</b>	<b>186.60</b>	<b>81.10</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

II = Greater than Action Level

For BCL VOC1

Criteria Comparison: 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases

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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	14GP029	14GP031	14GP031	14GP032	15GP005
	SAMPLE ID	1996 VRP	14PW02919	14PW03119	14OD03119	15PW00521
	DATE	Tier II	07/15/97	07/15/97	07/15/97	1/7/05/98
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Primary
Vinyl chloride	10	<2	[18]	[17]	<2	<2
Benzene	98.6	<5	<5	<5	<5	<5
Ethylbenzene	10220	<5	<5	<5	<5	<5
Methyl(tertbutyl) Ether	6950	<50	<50	<50	<50	<50
Toluene	20440	<5	<5	<5	<5	<5
Xylene (total)	204400	<5	<5	<5	<5	<5
Acetone	10220	<100	<100	<100	<100	---
Isopropylbenzene	1.02E+4	<5	<5	<5	<5	<5
2-Methylnaphthalene	2040.00	<10	<10	<10	<10	<10
Naphthalene	4088	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	5.11E+3	<5	5.3	<5	<5	<5
1,3,5-Trimethylbenzene	5.11E+3	<5	<5	<5	<5	<5
1,1-Dichloroethene	10220	71	100	97	180	57
1,1-Dichloroethene	7	<5	<5	<5	<5	<5
1,2-Dichloroethene	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	220	9.3	8.3	41	18
trans-1,2-Dichloroethene	2040	<5	<5	<5	<5	<5
1,2-Dichloroethene (Total)	...	...	...	...	...	...
1,2-Dichloropropane	4.21E+1	<5	<5	<5	<5	---
1,1,1-Trichloroethane	9198	48	7.1	6.6	71	15
Tetrachloroethene	56.1	<5	<5	<5	<5	<5
Trichloroethene	260	210	<5	<5	54	8.1 B
Chloroethane	9.86E+2	<10	<10	<10	<10	---
Sum of Concentrations	...	649.00	139.70	128.90	346.00	99.10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

|| = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units: ug/l)	SITE	15GP006	15GP007	15GP008	15GP013	17GP001
	SAMPLE ID	1996 VRP	15PW00620	15PW00721	15PW00821	15PW01319
	DATE	Tier II	11/05/96	11/05/96	11/05/96	07/15/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	[1300]	<10	<2
Benzene		98.6	<5	<130	<5	<5
Ethylbenzene		10220	<5	<130	<5	<5
Methyltarmbutyl Ether		6950	<50	<1300	<50	<50
Toluene		20440	<5	<130	<5	<5
Xylene (total)		204400	<5	<130	<10	<5
Acetone		10220	---	---	<100	<100
Isopropylbenzene		1.02E+4	<5	<130	<1	<5
2-Methylnaphthalene		2040.00	<10	<250	<10	<10
Naphthalene		4088	<5	<130	<5	<5
1,2,4-Trimethylbenzene		5.11E+3	<5	<130	<1	<400
1,3,5-Trimethylbenzene		5.11E+3	<5	<130	<1	<5
1,1-Dichloroethane		10220	41	140	6.7	2700
1,1-Dichloroethene		1.7	<5	<130	<5	<500
1,2-Dichloroethane		31.4	<5	<130	<5	<500
cis-1,2-Dichloroethene		1022	12	[2600]	5.5	[13000]
trans-1,2-Dichloroethene		2040	<5	<130	<5	<500
1,2-Dichloroethene (Total)		4.21E+1	---	---	<5	<500
1,2-Dichloropropane		9198	<5	<130	<5	2700
1,1,1-Trichloroethane		56.1	35	<130	<5	<500
Tetrachloroethene		260	73.8	[380]	17	<5
Trichloroethane		9.86E+2	---	---	<10	<10
Chloroethane		161.00	4420.00	29.20	18400.00	42600.00
<b>Sum of Concentrations</b>						

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[] = Greater than Action Level The following qualifier(s) exist: J, B, U

For RCL VOC

Criteria Comparison: 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	1D	1D	1D	1D	1D	1D
	SAMPLE ID	1996 VRP					
	DATE	Tier II	09/04/96	12/10/96	03/21/97	06/05/97	09/25/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<10	<10	<2	<10 E	
Benzene	98.6	<5	<5.0	<5	<5	<5.0 E	
Ethylbenzene	10220	<5	<5.0	<5	<5	<5.0 E	
Toluene	20440	<5	<5.0	<5	<5	<5.0 E	
Xylene (total)	204400	<5	<10	<10	<5	<10 E	
Naphthalene	4088						
1,2,4-Trimethylbenzene	6.11E+3	---	---	---	---	---	
1,1-Dichloroethane	10220	<5	<5.0	<5	<5	<5.0 E	
1,1-Dichloroethene	7	<5	<5.0	<5	<5	<5.0 E	
1,2-Dichloroethene	31.4	<5	<5.0	<5	<5	<5.0 E	
cis-1,2-Dichloroethene	1022	<5	<5.0	<5	<5	<5.0 E	
trans-1,2-Dichloroethene	2040	<5	<5.0	<5	<5	<5.0 E	
1,2-Dichloroethene (Total)							
1,1,1-Trichloroethane	9198	<5	<5.0	<5	<5	<5.0 E	
Tetrachloroethene	66.1	<5	<5.0	<5	<5	<5.0 E	
Trichloroethene	260	<5	<5.0	<5	<5	<5.0 E	
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00	
<hr/>							
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
For RCL VOC1	Criteria Comparison 1996 VRP Tier II Non-Residential						

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	1D	2D	2D	2D	2D
	SAMPLE ID	1996 VRP				
	DATE	Tier II	12/09/97	09/05/96	12/12/96	03/22/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<10	<2	<2	<10
Benzene		98.6	<5.0	<5	<5	<5
Ethylbenzene		10220	<5.0	<5	<5	<5
Toluene		20440	<5.0	<5	<5	<5
Xylene (total)		204400	<10	<5	<5	<10
Naphthalene		4089				
1,2,4-Trimethylbenzene		6.11E+3				
1,1-Dichloroethene		10220	<5.0	<5	<5	<5
1,1-Dichloroethane		7	<5.0	<5	<5	<5
1,2-Dichloroethene		31.4	<5.0	14	16	12
cis-1,2-Dichloroethene		1022	<5.0	11	13	10
trans-1,2-Dichloroethene		2040	<5.0	<5	<5	<5
1,2-Dichloroethene (Total)			...	...	...	...
1,1,1-Trichloroethane		9198	<5.0	<5	<5	<5
Tetrachloroethene		56.1	<5.0	<5	<5	<5
Trichloroethene		260	<5.0	<5	<5	<5
<b>Sum of Concentrations</b>		<b>0.00</b>	<b>25.00</b>	<b>28.00</b>	<b>22.00</b>	<b>33.00</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed						
For RCL VOCs						
Criteria Comparison 1996 VRP Tier II Non-Residential						

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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CONSTITUENT <small>(Units in ug/l)</small>	SITE	2D	2D	7-26	7-26	7-26
	SAMPLE ID	1996 VRP				
	DATE	Tier II	09/23/97	12/08/97	12/20/96	03/18/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<10	<2	<10	<2
Benzene	98.6	<5.0	<5.0	<5	<5	<5
Ethylbenzene	10220	<5.0	<5.0	<5	<5	<5
Toluene	20440	<5.0	<5.0	<5	<5	<5
Xylene (total)	204400	<10	<10	<5	<10	<5
Naphthalene	4088			<5		
1,2,4 Trimethylbenzene	5.11E+3			<5		
1,1-Dichloroethane	10220	<5.0	<5.0	<5	<5	<5
1,1-Dichloroethene	7	<5.0	<5.0	<5	<5	<5
1,2-Dichloroethane	31.4	14	10	<5	<5	<5
cis-1,2-Dichloroethene	1022	16	15	<5	<6	<5
trans-1,2-Dichloroethene	2040	<5.0	<5.0	<5	<5	<5
1,2-Dichloroethene (Total)	...	...	...	...	...	...
1,1,1-Trichloroethane	9198	<5.0	<5.0	<5	<5	<5
Tetrachloroethene	56.1	<5.0	<5.0	<5	<5	<5
Trichloroethene	260	<5.0	<5.0	<5	<5	<5
Sum of Concentrations		30.00	25.00	0.00	0.00	0.00

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in µg/l)	SITE	7-25	7-25	7-26	7-30	7D
	SAMPLE ID	1996 VRP	7-25		7-30	
	DATE	Tier II	07/18/97	09/26/97	12/08/97	07/18/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<10	<10	<2	<2
Benzene	99.6	<5	<5.0	<5.0	<5	<5
Ethylbenzene	10220	<5	<5.0	<5.0	<5	<5
Toluene	20440	<5	<5.0	<5.0	<5	<5
Xylenes (total)	204400	<5	<10	<10	<5	<5
Naphthalene	4088					
1,2,4-Trimethylbenzene	5.11E+3					
1,1-Dichloroethane	10220	<5	<5.0	<5.0	<5	<5
1,1-Dichloroethene	7	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethene	314	<5	<5.0	<5.0	<5	<5
cis-1,2-Dichloroethene	1022	<5	<5.0	<5.0	<5	20
trans-1,2-Dichloroethene	2040	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethene (Total)	2.2			<2		
1,1,1-Trichloroethane	9198	<5	<5.0	<5.0	<5	<5
Tetrachloroethene	66.1	<5	<5.0	<5.0	<5	<5
Trichloroethene	260	<5	<5.0	<5.0	<5	<5
Sum of Concentrations	3.40	0.00	0.00	0.00	27.70	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- =Not analyzed

For ECL VOCs

Allied Signal Co. Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	7D	7D	7D	7D	7D
	SAMPLE ID	1996 VRP	7D	7D	MW-101	
	DATE	Tier II	03/21/97	03/21/97	06/03/97	06/03/97
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Duplicate 1
Vinyl chloride		10	< 10	< 10	< 2	< 2
Benzene		98.6	< 5	< 5	< 5	< 5
Ethylbenzene		10220	< 5	< 5	< 5	< 5.0
Toluene		20440	< 5	< 5	< 5	< 5.0
Xylene (total)		204400	< 10	< 10	< 5	< 5
Naphthalene		4088				
1,2,4-Trimethylbenzene		5.11E+3	---	---	---	---
1,1-Dichloroethane		10220	< 5	< 5	< 5	< 5.0
1,1-Dichloroethene		7	< 5	< 5	< 6	< 5.0
1,2-Dichloroethane		31.4	< 5	< 5	< 5	< 5.0
cis-1,2-Dichloroethene		1022	24	22	35	37
trans-1,2-Dichloroethene		2040	< 5	< 5	6.2	7.8
1,2-Dichloroethene (Total)			---	---	---	---
1,1,1-Trichloroethane		9198	< 5	< 5	< 5	< 5.0
Tetrachloroethene		56.1	< 5	< 5	< 5	< 5.0
Trichloroethene		260	5.4	5	9.3	12
Sum of Concentrations		29.40	27.00	50.50	56.80	51.30

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in ug/l)	SITE	7D	7D	86-10	86-10	86-10
	SAMPLE ID	1996 VRP				
	DATE	Tier II	09/24/97	12/08/97	09/04/96	12/10/96
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<10	<2	<2	<10
Benzene	98.6	<5.0	<5.0	<5	<5	<5
Ethylbenzene	10220	<5.0	<5.0	<5	<5	<5
Toluene	20440	<5.0	<5.0	<5	<5	<5
Xylenes (total)	204400	<10	<10	<5	<5	<10
Naphthalene	4089	---	---	---	---	---
1,2,4-Trimethylbenzene	5.11E+3	---	---	---	---	---
1,1-Dichloroethane	10220	<5.0	<5.0	<5	<5	<5
1,1-Dichloroethene	7	<5.0	<5.0	<5	<6	<5
1,2-Dichloroethane	31.4	<5.0	<5.0	<5	<5	<5
cis-1,2-Dichloroethene	1022	37	22	78	88	76
trans-1,2-Dichloroethene	2040	5.6	<5.0	7.5	12	9.6
1,2-Dichloroethene (Total)	---	---	---	---	---	---
1,1,1-Trichloroethane	9198	<5.0	<5.0	22	7.2	<5
Tetrachloroethene	56.1	<5.0	<5.0	<5	<5	<5
Trichloroethene	260	8.8	<5.0	120	100	88
Sum of Concentrations		51.40	22.00	232.40	207.20	173.60

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOCs

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	86-10	86-10	86-10	86-16	86-16
	SAMPLE ID	1996 VRP				
	DATE	Tier II	06/05/97	09/26/97	12/09/97	09/04/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	<10 E	<10	<2
Benzene	98-6		<5	<5.0 E	<5.0	<5
Ethylbenzene	10220		<5	<5.0 E	<5.0	<5
Toluene	20440		<5	<5.0 E	<5.0	<5
Xylene (total)	204400		<5	<10 E	<10	<5
Naphthalene	4088					
1,2,4-Trimethylbenzene	5.11E+3		---	---	---	---
1,1-Dichloroethene	10220		<5	<5.0 E	<5.0	<5
1,1-Dichloroethene	7		<5	<5.0 E	<5.0	<5
1,2-Dichloroethane	31.4		<5	<5.0 E	<5.0	<5
cis-1,2-Dichloroethene	1022	95	92 J	98	<5	32
trans-1,2-Dichloroethane	2040		12	12 J	12	49
1,2-Dichloroethene (Total)			---	---	---	---
1,1,1-Trichloroethane	9198		<5	<5.0 E	<5.0	<5
Tetrachloroethene	56.1		<5	<5.0 E	<5.0	<5
Trichloroethene	250		100	120 J	120	[360]
Sum of Concentrations			207.00	224.00	230.00	394.00
						401.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
J = Greater than Action Level						
For RCL VOC	Criteria Comparison 1996 VRP Tier II Non-Residential					

**Analytical Summary - VOCs in Groundwater**  
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South Bound Brook							
CONSTITUENT (Units in ug/l)	SITE	86-15	86-15	86-15	86-15	86-15	86-15
	SAMPLE ID	1996 VRP	86-15				
	DATE	Tier II	03/18/97	06/05/97	06/05/97	09/25/97	12/09/97
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate	Primary	Primary
Vinyl chloride		10	<10	<2	<2	<10	<10
Benzene		98.6	<6	<6	<6	<6.0	<6.0
Ethylbenzene		10220	<6	<6	<6	<6.0	<6.0
Toluene		20440	<6	<6	<6	<6.0	<6.0
Xylene (total)		204400	<10	<6	<5	<10	<10
Naphthalene		4088					
1,2,4-Trimethylbenzene		5.11E+3	---	---	---	---	---
1,1-Dichloroethane		10220	<5	<5	<5	<6.0	<6.0
1,1-Dichloroethene		7	<5	<5	<5	<6.0	<6.0
1,2-Dichloroethane		31.4	<5	<5	<6	<6.0	<6.0
cis-1,2-Dichloroethene		1022	36	38	33	32	33
trans-1,2-Dichloroethene		2040	60	58	63	48	50
1,2-Dichloroethene (Total)		---	---	---	---	---	---
1,1,1-Trichloroethane		9198	<5	<5	<5	<6.0	<6.0
Tetrachloroethene		56.1	<5	<5	<5	<6.0	<6.0
Trichloroethene		260	[330]	[330]	[290]	[260]	[290]
Sum of Concentrations		425.00	426.00	376.00	340.00	373.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

## I) = Greater than Junction Level

EPR-BCL-VOC1

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	86-4	8D	8D	8D	8D
	SAMPLE ID	1996 VRP				
	DATE	Tier II	12/19/96	09/05/96	03/21/97	06/03/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	[10]	<2	<10	<2	<10
Benzene	98.6	<5	<5	<5	<5	<5.0
Ethylbenzene	10220	<6	<6	<6	<6	<6.0
Toluene	20440	<5	<5	<5	<5	<5.0
Xylene (total)	204400	<5	<5	<10	<5	<10
Naphthalene	4068	<5	--	--	--	--
1,2,4-Trimethylbenzene	5.11E+3	<400	--	--	--	--
1,1-Dichloroethane	10220	<6	<6	<6	<6	<6.0
1,1-Dichloroethene	7	<5	<5	<5	<5	<6.0
1,2-Dichloroethane	314	<6	<6	<6	<6	<6.0
cis-1,2-Dichloroethene	1022	<5	240	230	310	240
trans-1,2-Dichloroethene	2040	<6	23	27	35	23
1,2-Dichloroethene (Total)	--	--	--	--	--	--
1,1,1-Trichloroethane	9198	<6	<6	<6	<6	<6.0
Tetrachloroethene	56.1	<6	<6	<6	<6	<6.0
Trichloroethene	260	<6	<6	<6	<6	<6.0
Sum of Concentrations	10.00	263.00	257.00	345.00	263.00	

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

|) = Greater than Action Level

For RCL VOC1

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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CONSTITUENT (Units in ug/l)	SITE	8D	9-33	9-33	9-33	9-33
	SAMPLE ID	1996 VRP		9-33		
	DATE	Tier II	12/08/97	09/05/96	03/19/97	06/04/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<2	<10	<2	<10
Benzene	98.0	<5.0	<5	<5	<5	<5.0
Ethylbenzene	10220	<5.0	<5	<5	<5	<5.0
Toluene	20440	<5.0	<5	<5	<5	<5.0
Xylene (total)	204400	<10	<5	<10	<5	<10
Naphthalene	4088					
1,2,4-Trimethylbenzene	5.11E+3	...	...	...	...	...
1,1-Dichloroethane	10220	<5.0	<5	<5	<5	<5.0
1,1-Dichloroethene	7	<5.0	<5	<5	<5	<5.0
1,2-Dichloroethane	31.4	<5.0	<5	<5	<5	<5.0
cis-1,2-Dichloroethene	1022	220	<5	<5	<5	<5.0
trans-1,2-Dichloroethene	2040	21	<5	<5	<5	<5.0
1,2-Dichloroethene (Total)		...	...	...	...	...
1,1,1-Trichloroethane	9198	<5.0	<5	<5	<5	<5.0
Tetrachloroethene	66.1	<5.0	<5	<5	<5	<5.0
Trichloroethene	260	<5.0	<5	<5	<5	<5.0
Sum of Concentrations		241.00	0.00	0.00	0.00	0.00
<hr/>						
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed						
<hr/>						
For PCL VOC1						
Catalpa Corporation 1996 VRP Tier II Non-Residential						

**Analytical Summary - VOCs in Groundwater**  
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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC1

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

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CONSTITUENT (Units in ug/l)	SITE	D7	MW-1	MW-1	MW-1	MW-1
	SAMPLE ID	1996 VRP		MW-1		
	DATE	Tier II	12/11/97	12/20/96	03/18/97	06/06/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<2	<10	<2	<10
Benzene	98.6	<5.0	<5	<5	<5	<5.0
Ethylbenzenes	10220	<5.0	<5	<5	<5	<5.0
Toluene	20440	<5.0	<5	<5	<5	<5.0
Xylene (total)	204400	<10	<5	<10	<5	<10
Naphthalene	4088		<5			
1,2,4-Trimethylbenzene	5.11E+3		<400			
1,1-Dichloroethane	10220	<5.0	<5	<5	<5	<5.0
1,1-Dichloroethene	7	<5.0	<5	<5	<5	<5.0
1,2-Dichloroethane	31.4	14	<5	<5	<5	<5.0
cis-1,2-Dichloroethene	1022	<5.0	<5	<5	<5	<5.0
trans-1,2-Dichloroethene	2040	<5.0	<5	<5	<5	<5.0
1,2-Dichloroethene (Total)		---	---	---	---	---
1,1,1-Trichloroethene	9198	<5.0	<5	<5	<5	<5.0
Tetrachloroethene	66.1	<5.0	<5	<5	<5	<5.0
Trichloroethene	260	<5.0	<5	<5	<5	<5.0
Sum of Concentrations		14.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For BCL VOCs

Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - VOCs in Groundwater**  
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CONSTITUENT (Units in ug/l)	SITE	SAMPLE ID 1996 VRP	MW-1	MW-2	MW-2	MW-2	MW-2
	DATE		Tier II	12/10/97	12/20/98	03/18/97	06/05/97
	RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride	10		< 10	< 2	< 260	< 2	[70]
Benzene	98.6		< 6.0	< 6	< 130	< 6	< 25
Ethylbenzene	10220		< 6.0	< 6	< 130	< 6	< 25
Toluene	20440		< 5.0	< 6	< 130	< 6	< 25
Xylene (total)	204400		< 10	< 6	< 260	< 6	< 50
Naphthalene	4088			ND#			
1,2,4-Trimethylbenzene	5.11E + 3		---	< 6	---	---	---
1,1-Dichloroethane	10220		< 5.0	7.0	< 130	260	[190]
1,1-Dichloroethene	7		< 5.0	< 6	< 130	< 6	< 25
1,2-Dichloroethane	31.4		< 5.0	< 6	< 130	< 6	[49]
cis-1,2-Dichloroethene	1022		< 5.0	140	[2400]	[3500]	[2600]
trans-1,2-Dichloroethene	2040		< 5.0	< 6	< 130	< 6	< 25
1,2-Dichloroethene (Total)			---	---	---	---	---
1,1,1-Trichloroethane	9198		< 5.0	34	880	860	500
Tetrachloroethene	56.1		< 5.0	< 6	< 130	< 6	< 25
Trichloroethene	260		< 5.0	< 6	170	< 6	36
Sum of Concentrations			0.00	181.00	3450.00	4720.00	3446.00

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

# = Constituent in more than one test method, highest result reported. || = Greater than Action Level ND = Not Detected

For RCL VOC1

## Criteria Comparison 1996 VRP Tier II Non-Residential

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CONSTITUENT [Units in ug/l]	SITE	MW-2	MW-3	MW-3	MW-3	MW-3
	SAMPLE ID	1996 VRP				
	DATE	Tier II	12/09/97	12/20/96	03/18/97	03/18/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Vinyl chloride	10	83	<2	<10	<10	<2
Benzene	98.6	<10	<5	<5	<5	<5
Ethylbenzene	10220	<10	<5	<5	<5	<5
Toluene	20440	<10	<5	<5	<5	<5
Xylene (total)	204400	<20	<5	<10	<10	<5
Naphthalene	4088	---	<5	---	---	---
1,2,4-Trimethylbenzene	5.11E+3	---	<400	---	---	---
1,1-Dichloroethane	10220	110	<5	<5	<5	<5
1,1-Dichloroethene	7	<10	<5	<5	<5	<5
1,2-Dichloroethane	31.4	<10	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	950	75	38	39	50
trans-1,2-Dichloroethene	2040	14	<5	<5	<5	<5
1,2-Dichloroethene (Total)	...	...	...	...	...	...
1,1,1-Trichloroethane	9198	240	9.3	<5	<6	7.6
Tetrachloroethene	66.1	<10	<5	<5	<5	<5
Trichloroethene	260	19	6.8	6.2	6	6.0
Sum of Concentrations	1416.00	91.10	44.20	45.00	63.60	

Analytical Summary - VOCs in Groundwater  
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CONSTITUENT (Units: in ug/l)	SITE	MW-3	MW-3	MW-3	MW-4	MW-4
	SAMPLE ID	1996 VRP				
	DATE	Tier II	09/26/97	12/10/97	12/10/97	12/19/96
	RESULT TYPE	Non-Residential	Primary	Primary	Duplicate	Primary
Vinyl chloride		10	<10	<10	<10	<2
Benzene		98.6	<5.0	<5.0	<5.0	<5
Ethylbenzene		10220	<5.0	<5.0	<5.0	<5
Toluene		20440	<5.0	<5.0	<5.0	<5
Xylene (total)		204400	<10	<10	<10	<10
Naphthalene		4688				<5
1,2,4-Trimethylbenzene		5.11E+3				<400
1,1-Dichloroethane		10220	5.0	5.1	5.2	<5
1,1-Dichloroethene		7	<5.0	<5.0	<5.0	<5
1,2-Dichloroethane		31.4	<5.0	<5.0	<5.0	<5
cis-1,2-Dichloroethene		1022	67	60	62	23
trans-1,2-Dichloroethene		2040	<5.0	<5.0	<5.0	<5
1,2-Dichloroethene (Total)			---	---	---	---
1,1,1-Trichloroethane		9198	8.6	6.9	7.1	<5
Tetrachloroethene		56.1	<5.0	<5.0	<5.0	<5
Trichloroethene		260	8.4	5.7	5.8	13
Sum of Concentrations		79.00	77.70	80.10	36.00	24.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL VOC1	Criteria Comparison 1996 VRP Tier II Non-Residential					

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CONSTITUENT (Units in ug/l)	SAMPLE ID	SITE	MW-4	MW-4	MW-4	MW-5	MW-5
		1996 VRP	Tier II	06/04/97	09/26/97	12/10/97	12/20/96
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Vinyl chloride		10	<2	<10	<10	[13]	[19]
Benzene		98.6	<5	<5.0	<6.0	<5	<6
Ethylbenzene		10220	<5	<5.0	<6.0	<5	<5
Toluene		20440	<5	<5.0	<6.0	<5	<5
Xylene (total)		204400	<5	<10	<10	<5	<5
Naphthalene		4088				ND#	ND#
1,2,4 Trimethylbenzene		6.11E+3	---	---	---	<400	<400
1,1-Dichloroethane		10220	<5	6.6	6.5	<5	<5
1,1-Dichloroethene		7	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethane		31.4	<5	<5.0	<6.0	<5	<5
cis-1,2-Dichloroethene		1022	5.4	10	5.2	14	13
trans-1,2-Dichloroethene		2040	<5	<5.0	<6.0	<5	<5
1,2-Dichloroethene (Total)			---	---	---	---	---
1,1,1-Trichloroethane		9198	<5	<5.0	<6.0	12	11
Tetrachloroethene		56.1	<5	<5.0	<5.0	<5	<5
Trichloroethene		260	17	20	21	29	29
Sum of Concentrations			22.40	35.60	32.70	68.00	72.00
<hr/>							
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed # = Constituent more than one test method, highest result reported. [ ] = Greater than Action Level ND = Not Detected							
For RCL VOC1      Criteria Comparison 1998 VRP Tier II Non Residential							

**Analytical Summary - VOCs in Groundwater**  
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Values represent total concentrations unless noted      <= Not detected at indicated reporting limit      --- = Not analyzed

[ ] = Greater than Action Level

For RCL VOC1

## Criteria Comparison 1996 VRP Tier II Non-Residential

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**Values represent total concentrations unless noted**

|| = Greater than or equal to

F- PCL Version 1.000/RP Test Non-Substantia

Analytical Summary - VOCs in Groundwater  
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CONSTITUENT (Units in ug/l)	SITE	MW-8	MW-8	MW-8	MW-9	MW-9
	SAMPLE ID	1996 VRP				
	DATE	Tier II	12/19/96	03/16/97	06/05/97	12/20/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	[14]	<2	<2	<10
Benzene	98.6	<5	<5	<5	<5	<5
Ethylbenzene	10220	<5	<5	<5	<5	<5
Toluene	20440	17	<5	<5	<5	<5
Xylene (total)	204400	<5	<10	<5	<5	<10
Naphthalene	4088	<5			<5	
1,2,4-Trimethylbenzene	5.11E+3	<400	---	---	<400	---
1,1-Dichloroethane	10220	430	330	440	<5	<5
1,1-Dichloroethene	7	<5	5.3	<5	<5	<5
1,2-Dichloroethane	31.4	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	1022	900	1000	[1400]	<5	<5
trans-1,2-Dichloroethene	2040	6.7	9	<5	<5	<5
1,2-Dichloroethene (Total)		---	---	---	---	---
1,1,1-Trichloroethane	9198	8	7.6	<5	<5	<5
Tetrachloroethene	56.1	18	19	<5	<5	<5
Trichloroethane	260	200	78	140	<5	<5
<b>Sum of Concentrations</b>		<b>1584.70</b>	<b>1462.90</b>	<b>1980.00</b>	<b>0.00</b>	<b>0.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

(|) = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Non-Residential

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 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units: in ug/l)	SITE	MW-9	MW-9	MW-9	S1	S1
	SAMPLE ID	1996 VRP			09/06/96	S1
	DATE	Tier II	06/03/97	09/25/97	12/08/97	03/19/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<2	<10	<10	<2	<10
Benzene	98.6	<5	<5.0	<5.0	<5	<5
Ethylbenzene	10220	<5	<5.0	<5.0	<5	<5
Toluene	20440	<5	<5.0	<5.0	<5	<5
Xylene (total)	204400	<5	<10	<10	<5	<10
Naphthalene	4088					
1,2,4-Trimethylbenzene	5.11E+3	---	---	---	---	---
1,1-Dichloroethane	10220	<5	<5.0	<5.0	<5	<5
1,1-Dichloroethene	7	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethane	31.4	<5	<5.0	<5.0	<5	<5
cis-1,2-Dichloroethene	1022	<5	<5.0	<5.0	6.4	6.8
trans-1,2-Dichloroethene	2040	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethene (Total)		---	---	---	---	---
1,1,1-Trichloroethane	8198	<5	<5.0	<5.0	<5	<5
Tetrachloroethene	56.1	<5	<5.0	<5.0	<5	<5
Trichloroethene	280	<5	<5.0	<5.0	<5	<5
Sum of Concentrations	0.00	0.00	0.00	9.80	6.80	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL VOCs

Groundwater Comparison VRP Non-Residential

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 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in ug/l)	SITE	S1	S1	S1	S14	S14	
	SAMPLE ID	1996 VRP					
	DATE	Tier II	06/04/97	09/23/97	12/09/97	09/04/96	12/10/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	<10	<10	<2	[23]
Benzene		98.6	<5	<5.0	<5.0	<5	<5
Ethylbenzene		10220	<5	<5.0	<5.0	<5	<5
Toluene		20440	<5	<5.0	<5.0	<5	<5
Xylene (total)		204400	<5	<10	<10	<5	<5
Naphthalene		4088					
1,2,4-Trimethylbenzene		5.11E+3	---	---	---	---	---
1,1-Dichloroethane		10220	<5	<5.0	<5.0	22	15
1,1-Dichloroethene		7	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethane		31.4	<5	<5.0	<5.0	[180]	<5
cis-1,2-Dichloroethene		1022	6.3	5.8	6.4	80	8.2
trans-1,2-Dichloroethene		2040	<5	<5.0	<5.0	<5	<5
1,2-Dichloroethene (Total)			---	---	---	---	---
1,1,1-Trichloroethane		9198	<5	<5.0	<5.0	22	<5
Tetrachloroethene		66.1	6.0	7.7	7.5	<5	<5
Trichloroethene		260	<5	<5.0	<5.0	38	<5
Sum of Concentrations		12.30	13.50	13.90	350.30	60.10	
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
= Greater than Action Level							
For RCL VOC1		Criteria Comparison 1996 VRP Tier II Non-Residential					

**Analytical Summary - VOCs in Groundwater**  
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SOUTH BEND, Indiana							
CONSTITUENT (Units in $\mu\text{g/l}$ )	SITE	S14	S14	S14	S14	S15	
	SAMPLE ID	1996 VRP	S14				
	DATE	Tier II	03/19/97	06/05/97	09/24/97	12/11/97	09/04/98
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	10	<10	<2	<10	<10	<2	
Benzene	98.6	<5	<5	<5.0	<5.0	<5	<5
Ethylbenzene	10220	<5	<5	<5.0	<5.0	<5	<5
Toluene	20440	<5	<5	<5.0	<5.0	<5	<5
Xylene (total)	204400	<10	<5	<10	<10	<5	
Naphthalene	4988						
1,2,4-Trimethylbenzene	5.11E+3						
1,1-Dichloroethane	10220	21	21	44	61	13	
1,1-Dichloroethene	7	5.3	<5	6.3	17.8	<5	
1,2-Dichloroethane	31.4	12	17	11	11	[32]	
cis-1,2-Dichloroethene	1022	66	71	110	140	30	
trans-1,2-Dichloroethene	2040	5	5.1	7.6	10	<5	
1,2-Dichloroethens (Total)		...	...	...	...	...	
1,1,1-Trichloroethane	9198	21	21	35	34	<5	
Tetrachloroethene	66.1	<5	<5	<5.0	<5.0	<5	
Trichloroethene	260	40	44	64	77	<5	
Sum of Concentrations		170.30	179.10	277.90	340.80	75.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

$\{ \} =$  Greater than or equal to

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CONSTITUENT	(Units in ug/l)	SITE	S15	S15	S15	S15	S15
		SAMPLE ID	1996 VRP	S15	06/05/97	09/24/97	MW-101
		DATE	Tier II	03/21/97	Primary	Primary	09/24/97
		RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
							Primary
Vinyl chloride		10	[18]	[30]	[31]	[32]	[25]
Benzene		98.6	<5	<5	<5.0	<5.0	<5.0
Ethylbenzene		10220	<5	<5	<5.0	<5.0	<5.0
Toluene		20440	<5	<5	<5.0	<5.0	<5.0
Xylene (total)		204400	<10	<5	<10	<10	<10
Naphthalene		4088	...	...	...	...	...
1,2,4-Trimethylbenzene		6.11E+3	...	...	...	...	...
1,1-Dichloroethane		10220	<5	14	14	14	14
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0	<5.0
1,2-Dichloroethane		314	24	[41]	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene		1022	18	35	22	23	<5.0
trans-1,2-Dichloroethene		2040	<5	6.3	6.4	5.8	<5.0
1,2-Dichloroethene (Total)		...	...	...	...	...	...
1,1,1-Trichloroethane		9198	<5	<5	<5.0	<5.0	<5.0
Tetrachloroethene		56.1	<5	<5	<5.0	<5.0	<5.0
Trichloroethene		260	<5	<5	<5.0	<5.0	<5.0
Sum of Concentrations		60.00	126.30	72.40	74.80	39.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

= Greater than Action Level

| For RCL VOC1

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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CONSTITUENT (Units in ug/l)	SITE	S16	S16	S16	S16	S16
	SAMPLE ID	1996 VRP	S16			
	DATE	Tier II	09/04/96	03/20/97	06/03/97	09/24/97
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	<10	<2	<10
Benzene		98.6	<5	<5	<5	<5.0
Ethylbenzene		10220	<5	<5	<5.0	<5.0
Toluene		20440	<5	<5	<5.0	<5.0
Xylene (total)		204400	<5	<10	<5	<10
Naphthalene		4088				
1,2,4-Trimethylbenzene		5.11E+3				
1,1-Dichloroethane		10220	<5	<5	<5.0	<5.0
1,1-Dichloroethene		7	[16]	[28]	<5	<5.0
1,2-Dichloroethane		31.4	<5	<5	<5	<5.0
cis-1,2-Dichloroethene		1022	180	150	120	91
trans-1,2-Dichloroethene		2040	[17]	[11]	<6	18
1,2-Dichloroethane (Total)			...	...	...	...
1,1,1-Trichloroethane		9198	[27]	[25]	[37]	27
Tetrachloroethene		56.1	<5	<5	<5	<5.0
Trichloroethene		260	[360]	[380]	[650]	[650]
<b>Sum of Concentrations</b>		<b>599.00</b>	<b>694.00</b>	<b>807.00</b>	<b>696.00</b>	<b>582.00</b>

Values represent total concentrations unless noted   < = Not detected at indicated reporting limit   --- = Not analyzed  
 [ ] = Greater than detection Level  
 E = RCL VOC

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE	S17	S17	S17	S17	S17
	SAMPLE ID	1996 VRP	S17			
	DATE	Tier II	09/04/96	03/20/97	06/03/97	09/24/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	<10	<2	<10
Benzene		98.6	<5	<5	<5.0	<5.0
Ethylbenzene		10220	<5	<5	<5.0	<5.0
Toluene		20440	<5	<5	<5.0	<5.0
Xylene (total)		204400	<5	<10	<5	<10
Naphthalene		4088				
1,2,4-Trimethylbenzene		6.11E+3				
1,1-Dichloroethane		10220	<5	<5	<5.0	<5.0
1,1-Dichloroethene		7	<5	<5	<5.0	<5.0
1,2-Dichloroethane		31.4	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethene		1022	<5	<5	<5.0	<5.0
trans-1,2-Dichloroethene		2040	<5	<5	<5.0	<5.0
1,2-Dichloroethene (Total)		...	...	...	...	...
1,1,1-Trichloroethane		8198	74	34	40	51
Tetrachloroethene		56.1	<5	<5	<5.0	<5.0
Trichloroethene		260	22	16	25	28
Sum of Concentrations		103.40	50.00	65.00	79.00	62.00
<hr/>						
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed						
For RCL VOC1	Criteria Comparison 1996 VRP Tier II Non-Residential					

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

For BCL VOC

Analytical Summary - VOCs in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE	S26	S28	S4A	S4A	S4A
	SAMPLE ID	1996 VRP		S28	S4A	
	DATE	Tier II	12/09/97	02/14/97	09/05/96	12/10/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	< 10	< 10	< 2	< 2
Benzene		98.6	< 5.0	< 5	< 6	< 5
Ethylbenzene		10220	< 5.0	< 5	< 6	< 5
Toluene		20440	< 5.0	< 5	< 6	< 5
Xylene (total)		204400	< 10	< 10	< 6	< 6
Naphthalene		4088		< 5		
1,2,4-Trimethylbenzene		5.11E+3	---	< 1	---	---
1,1-Dichloroethane		10220	< 5.0	< 5	16	< 6
1,1-Dichloroethene		7	< 5.0	< 5	< 6	< 6
1,2-Dichloroethene		31.4	< 5.0	< 5	< 6	< 6
cis-1,2-Dichloroethene		1022	22	39	150	42
trans-1,2-Dichloroethene		2040	< 5.0	66	< 6	< 6
1,2-Dichloroethene (Total)			---	---	---	---
1,1,1-Trichloroethane		9198	< 5.0	< 5	< 6	< 6
Tetrachloroethene		56.1	< 5.0	< 5	< 6	< 6
Trichloroethene		260	65	85	< 6	< 6
Sum of Concentrations			87.00	190.00	166.00	315.10
						230.80
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
[] = Greater than Action Level						
For RCL VOC1						
Criteria Comparison 1996 VRP Tier II Non-Residential						

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
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CONSTITUENT (Units in ug/l)	SITE	S4A	S4A	S4A	S5	S6
	SAMPLE ID	1996 VRP				
	DATE	Tier II	06/03/97	09/23/97	12/09/97	12/20/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Vinyl chloride		10	<2	<10	<10	<2
Benzene		98.6	<5	<5.0	<5.0	<5
Ethylbenzene		10220	<5	<5.0	<5.0	<5
Toluene		20440	<5	<5.0	<5.0	<5
Xylene (total)		204400	<5	<10	<10	<5
Naphthalene		4088	--	--	--	<5
1,2,4-Trimethylbenzene		5.11E+3	--	--	<400	<400
1,1-Dichloroethane		10220	31	24	<5	<5
1,1-Dichloroethene		7	<5	<5.0	<5.0	<5
1,2-Dichloroethane		31.4	<5	<5.0	<5.0	<5
cis-1,2-Dichloroethene		1022	300	220	<5	<5
trans-1,2-Dichloroethene		2040	<5	<5.0	<5.0	<5
1,2-Dichloroethene (Total)		--	--	--	--	--
1,1-Trichloroethane		9198	<5	<5.0	<5.0	<5
Tetrachloroethene		66.1	<5	<6.0	<5.0	<5
Trichloroethene		260	<5	<5.0	<5.0	<5
Sum of Concentrations		331.00	244.00	233.00	0.00	0.00

**Analytical Summary - Total Phenols in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL PHENOLS

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Total Phenols in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**

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## **Voluntary Site Investigation**

AlliedSignal Industrial Complex

**South Bend, Indiana**

CONSTITUENT (Units in ug/l)	SITE	7-25	7D	7D	7D	7D
	SAMPLE ID	1996 VRP				
	DATE	Tier.II	09/25/97	03/21/97	03/21/97	09/24/97
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Duplicate 1
Total Phenols	12264	< 10	20	10	< 10	< 10
Sum of Concentrations:		0.00	20.00	10.00	0.00	0.00

**Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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**Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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**Analytical Summary - Total Phenols in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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**Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases**

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## **Voluntary Site Investigation**

## AlliedSignal Industrial Complex

## **South Bend, Indiana**

CONSTITUENT (Units in ug/l)	SITE	MW-3	MW-3	MW-3	MW-4	MW-4
	SAMPLE ID	1996 VRP	MW-3	MW-3	MW-4	MW-4
	DATE	Tier II	03/18/97	03/18/97	09/26/97	03/18/97
RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Primary	Primary
Total Phenols	12264	< 10	< 10	< 10	< 10	< 10
Sum of Concentrations		0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**SOURCE PHENOLS**

Comparison of VRP and Non-Optimal

**Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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**Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases

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AlliedSignal Industrial Complex

South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	S14	S15	S15	S15	S16
	SAMPLE ID	1996 VRP	S15	MW-101	S16	
	DATE	Tier II	09/24/97	03/21/97	09/24/97	03/20/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1
Total Phenols		12264	<10	<10	<10	<10
Sum of Concentrations			0.00	0.00	0.00	0.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
For RCL PHENOLS		Criteria Comparison 1996 VRP Tier II Non-Residential				

**Analytical Summary - Total Phenols in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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**Analytical Summary - Total Phenols in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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South Bend, Indiana			
CONSTITUENT	SITE	S4A	
(Units in ug/l)	SAMPLE ID	1996 VRP	
	DATE	Tier II	09/23/97
	RESULT TYPE	Non-Residential	Primary
Total Phenols	12264	10	
Sum of Concentrations		10.00	
Reference			
Comments			
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed			
For RCL PHENOLS			Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE	01CPT011	01CPT011	01CPT012	01CPT012	01CPT012
	SAMPLE ID	1996 VRP	01CPW01137	01CPW01147	01CPW01230	01QD01230
	DATE	Tier II	02/10/97	02/11/97	02/12/97	02/12/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Duplicate 1	Primary
Cyanide	2044	220	12	20	30	32
Arsenic, Dissolved (Filtered)	50	<1	4.4	<1	6.3	10
Barium, Dissolved (Filtered)	7154	74	56	51	74	81
Cadmium, Dissolved (Filtered)	51.1	<0.2	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	<10	<10	<10	<10	<10
Chromium (VI), Dissolved (Filtered)		<50	<50	<50	<50	<50
Lead, Dissolved (Filtered)	1.50E + 1	<1	<1	<1	<1	<1
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	110	<10	220	<10	<10
Selenium, Dissolved (Filtered)	511	<2	<2	<2	<2	<2
Zinc, Dissolved (Filtered)	30660	70	44	95	62	<20
Chromium, Total						
Lead, Total		---	---	---	---	---
Nickel, Total						
<b>Sum of Concentrations</b>		<b>474.00</b>	<b>116.40</b>	<b>386.00</b>	<b>172.30</b>	<b>123.00</b>

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For ECL INORG

Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in ug/l)	SITE	01CPT012	01CPT013	01CPT013	01CPT013	01CPT016
	SAMPLE ID	1996 VRP	01CPW01250	01CPW01322	01CPW01331	01CPW01345
	DATE	Tier II	02/12/97	02/13/97	02/14/97	02/14/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	10	7	<5	<5	ND
Arsenic, Dissolved (Filtered)	50	2.2	1.2	<1.7	<1.3	1.8
Barium, Dissolved (Filtered)	7154	73	140	120	130	49
Cadmium, Dissolved (Filtered)	51.1	0.3	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	13	<10	<10	<10	10
Chromium (VI), Dissolved (Filtered)		<50	<50	<50	<50	<50
Lead, Dissolved (Filtered)	1.50E + 1	<1	<1	<1	<1	<1
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	98	<10	450	<10	<10
Selenium, Dissolved (Filtered)	51.1	<2	<2	<2	<2	3.2
Zinc, Dissolved (Filtered)	30660	82	26	38	<20	<20
Chromium, Total						
Lead, Total		---	---	---	---	---
Nickel, Total						
<b>Sum of Concentrations</b>		<b>278.50</b>	<b>174.20</b>	<b>609.70</b>	<b>133.30</b>	<b>64.00</b>
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed						
ND = Not Detected						
For RCL INORG						
Criteria Comparison 1996 VRP Tier II Non-Residential						

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases

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 AlliedSignal Industrial Complex  
 South Bend, Indiana

CONSTITUENT (Units in ug/l)	SITE	03GP005	03GP006	03GP011	03GP012	04GP001
	SAMPLE ID	1996 VRP	03PW00521	03PW0620	03PW1126	03PW1223
	DATE	Tier II	10/25/96	10/01/96	10/02/96	10/22/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	---	---	---	---	---
Arsenic, Dissolved (Filtered)	50	<1	<1	<1	<1	<1
Barium, Dissolved (Filtered)	7154	28	63	100	89 B	110
Cadmium, Dissolved (Filtered)	51.1	<0.2	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	12	<10	<10	<10	<10
Chromium (Ti), Dissolved (Filtered)		<50	<50	<50	<50	<50
Lead, Dissolved (Filtered)	1.50E + 1	<1	<1	<1	<1	<1
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	<10	<10	<10	<10	<10
Selenium, Dissolved (Filtered)	51	<2	<2	<2	<2	<2
Zinc, Dissolved (Filtered)	30660	<20	<20	<20	<20	<20
Chromium, Total						
Lead, Total		---	---	---	---	---
Nickel, Total		---	---	---	---	---
Sum of Concentrations	40.00	63.00	100.00	89.00	110.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

F = RCL IN 996

■ = No Co. son ■ = VRP ■ = Non-R. identi. ■ =

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SITE	04GP004	09GP002	11GP001	11GP003	11GP006
	SAMPLE ID	1996 VRP	04PS00421	11PW0115	11PW00316	11PW00617
	DATE	Tier II	10/23/96	11/17/96	10/03/96	10/04/96
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Cyanide	2044	---	ND	---	---	---
Arsenic, Dissolved (Filtered)	50	<1	17	<1	<1	<1
Barium, Dissolved (Filtered)	7154	97	650	130	61	140
Cadmium, Dissolved (Filtered)	51.1	<0.2	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	<10	<10	<10	<10	<10
Chromium (VI)-Dissolved (Filtered)		<50	<50	<50	<50	<50
Lead, Dissolved (Filtered)	1.50E+1	2.7	<1	<1	<1	<1
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	<10	16	<10	<10	<10
Selenium, Dissolved (Filtered)	611	<2	<2	<2	<2	<2
Zinc, Dissolved (Filtered)	30660	<20	<20	<20	<20	<20
Chromium, Total						
Lead, Total		---	---	---	---	---
Nickel, Total						
Sum of Concentrations		99.70	682.00	130.00	61.00	140.00
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed						
ND = Not Detected						
For RCL INORG						
Criteria Comparison 1996 VRP Tier II Non-Residential						

**Analytical Summary - Inorganics in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in ug/l)	SITE	12GP001	13GP001	13GP003	13GP004	13GP004
	SAMPLE ID	1996 VRP	12PW00121	13PW00119	13PW00319	13PW00419
	DATE	Tier II	11/12/96	10/23/96	11/01/96	11/01/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Cyanide	2044	---	---	8	80	70
Arsenic, Dissolved (Filtered)	50	1.4	<1	<1	27	27
Berium, Dissolved (Filtered)	7164	98	66	79	160	170
Cadmium, Dissolved (Filtered)	51.1	<0.2	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	<10	<10	<10	<10	<10
Chromium (VI), Dissolved (Filtered)	56	<50	<50	<50	<60	<60
Lead, Dissolved (Filtered)	1.60E+1	<1	<1	<1	<1	<1
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	<10	<10	<10	18	18
Selenium, Dissolved (Filtered)	511	<2	<2	<2	<2	<2
Zinc, Dissolved (Filtered)	30660	<20	<20	<20	<20	<20
Chromium, Total	56	---	---	---	---	---
Lead, Total	56	---	---	---	---	---
Nickel, Total	2040	---	---	---	---	---
Sum of Concentrations	100.40	56.00	87.00	285.00	285.20	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

## Analytical Summary - Inorganics in Groundwater

### Area 1 - On-site Groundwater VOCs and Naphtha Releases

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## **Voluntary Site Investigation**

### AlliedSignal Industrial Complex

## South Bend, Indiana

CONSTITUENT (Units: ug/l)	SITE	13GP005	13GP006	14GP003	14GP011	17GP001
	SAMPLE ID	1996 VRP	13PW00520	13PW00620	14PW00322	14PW01120
	DATE	Tier II	11/03/96	11/15/96	10/25/96	10/31/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	< 6	152001 PI	---	---	---
Arsenic, Dissolved (Filtered)	50	<1	2.5	2	<1	21
Barium, Dissolved (Filtered)	7164	98	32	44	153	430
Cadmium, Dissolved (Filtered)	51.1	6.8	<0.2	<0.2	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	<10	<10	<10	<10	<10
Chromium (T), Dissolved (Filtered)		<50	<50	<50	<50	<50
Lead, Dissolved (Filtered)	1.50E + 1	<1	<1	<1	<1	4.1
Mercury, Dissolved (Filtered)	6.1	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	<10	570	<10	<10	<10
Selenium, Dissolved (Filtered)	511	3.9	<2	<2	<2	<2
Zinc, Dissolved (Filtered)	30660	240	640	<20	<20	<20
Chromium, Total				---	---	---
Lead, Total		---	---	---	---	---
Nickel, Total		---	---	---	---	---
Sum of Concentrations		348.70	6444.50	46.00	153.00	456.10

Values represent total concentrations unless noted      < = Not detected at indicated reporting limit      --- = Not analyzed

**I** = Greater than Action Level The following qualifier(s) exist: J, B, U, P, I

For RCL INORG

### Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases

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Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana

CONSTITUENT	(Units in µg/l)	SITE	1D	1D	1D	2D	2D
		SAMPLE ID	1996 VRP	1D	09/26/97	09/06/96	03/22/97
		DATE	Tier II	09/04/96	03/21/97	09/26/97	09/06/96
RESULT TYPE		Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	ND	<5	<5	ND	<5	
Arsenic, Dissolved (Filtered)	50	---	---	---	---	---	---
Barium, Dissolved (Filtered)	7164	---	---	---	---	---	---
Cadmium, Dissolved (Filtered)	51.1	---	---	---	---	---	---
Copper, Dissolved (Filtered)	3800	---	---	---	---	---	---
Chromium (VI), Dissolved (Filtered)				<5			
Lead, Dissolved (Filtered)	1.50E + 1	---	---	<2.0	---	---	---
Mercury, Dissolved (Filtered)	6.1	---	---	---	---	---	---
Nickel, Dissolved (Filtered)	2040	---	---	<20	---	---	---
Selenium, Dissolved (Filtered)	511	---	---	---	---	---	---
Zinc, Dissolved (Filtered)	30660	---	---	---	---	---	---
Chromium, Total		ND	8	ND	ND	9.4	
Lead, Total	0.8	<2	---	ND	<2		
Nickel, Total		ND	<20	---	ND	<20	
Sum of Concentrations	0.80	8.00	0.00	0.00	8.40		

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

F = BCL INAPPL

Concen 1 VRP Non Residential

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases

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Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
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CONSTITUENT (Units in ug/l)	SAMPLE ID	DATE	2D	7-25	7-25	7-26	7D
			Tier II	09/23/97	12/20/96	03/18/97	09/26/97
			RESULT TYPE	Non-Residential	Primary	Primary	Primary
Cyanide	2044		<5	ND	<5	<5	ND
Arsenic, Dissolved (Filtered)	50			<1			
Barium, Dissolved (Filtered)	7154		---	55	---	---	---
Cadmium, Dissolved (Filtered)	51.1			0.7			
Copper, Dissolved (Filtered)	3800		---	<10	---	---	---
Chromium (VI) Dissolved (Filtered)			<5	<50		<5	
Lead, Dissolved (Filtered)	1.50E + 1		<2.0	<1	---	<2.0	---
Mercury, Dissolved (Filtered)	6.1			<0.2		---	---
Nickel, Dissolved (Filtered)	2040		<20	<10	---	<20	---
Selenium, Dissolved (Filtered)	611			<2			
Zinc, Dissolved (Filtered)	30660		---	<20	---	---	---
Chromium, Total				---	7	---	ND
Lead, Total			---	---	27	---	1.2
Nickel, Total				---	<20	---	ND
Sum of Concentrations	0.60		55.70	34.00	0.00	1.20	
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
ND = Not Detected							
For RCL INORG							
Criteria Comparison 1996 VRP Tier II Non-Residential							

Analytical Summary - Inorganics in Groundwater  
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 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	7D	7D	7D	7D	7D	86-10
	SAMPLE ID	1996 VRP	7D	7D	7D	7D	
	DATE	Tier II	03/21/97	03/21/97	09/24/97	09/24/97	09/04/96
	RESULT TYPE	Non-Residential	Primary	Duplicate 1	Primary	Duplicate 1	Primary
Cyanide	2044	< 5	< 5	< 5	< 5	< 5	ND
Arsenic, Dissolved (Filtered)	50	---	---	---	---	---	---
Barium, Dissolved (Filtered)	7154	---	---	---	---	---	---
Cadmium, Dissolved (Filtered)	51.1	---	---	---	---	---	---
Copper, Dissolved (Filtered)	3800	---	---	---	---	---	---
Chromium (VI), Dissolved (Filtered)				< 5	< 5	< 5	---
Lead, Dissolved (Filtered)	1.60E + 1	---	---	< 2.0	< 2.0	< 2.0	---
Mercury, Dissolved (Filtered)	6.1	---	---	---	---	---	---
Nickel, Dissolved (Filtered)	2040	---	---	< 20	< 20	< 20	---
Selenium, Dissolved (Filtered)	51.1	---	---	---	---	---	---
Zinc, Dissolved (Filtered)	30660	---	---	---	---	---	---
Chromium, Total		21	21	21	21	21	13
Lead, Total		2.6	3.1	---	---	---	2.7
Nickel, Total		< 20	< 20	---	---	---	5.4
Sum of Concentrations		23.50	24.10	0.00	0.00	0.00	21.10

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

Legend: SCL I [REDACTED] Comparison [REDACTED] VRP [REDACTED] Non-Residential [REDACTED]

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	66-10	66-10	66-15	66-15	66-16
	SAMPLE ID	1996 VRP	66-10		66-15	
	DATE	Tier II	03/18/97	09/26/97	09/04/96	03/18/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Cyanide		2044	<5	6	ND	<5
Arsenic, Dissolved (Filtered)		50				
Barium, Dissolved (Filtered)		7154	---	---	---	---
Cadmium, Dissolved (Filtered)		51.1				
Copper, Dissolved (Filtered)		3800	---	---	---	---
Chromium (VI) Dissolved (Filtered)				<5		<5
Lead, Dissolved (Filtered)		1.50E+1	---	<2.0		<2.0
Mercury, Dissolved (Filtered)		6.1				
Nickel, Dissolved (Filtered)		2040	<20			<20
Selenium, Dissolved (Filtered)		511				
Zinc, Dissolved (Filtered)		30660	---	---	---	---
Chromium, Total			<5	4.8	<6	
Lead, Total		2.4	---	6.8	6.4	---
Nickel, Total			<20	11	<20	---
Sum of Concentrations		2.40	6.00	21.60	6.40	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

For RCL INORG Criteria Comparison 1996 VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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CONSTITUENT (Units in ug/l)	SITE	86-4	8D	8D	8D	9-33
	SAMPLE ID	1996 VRP				
	DATE	Tier II	12/19/96	09/05/96	03/21/97	09/24/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Cyanide	2044	ND	ND	161	90	ND
Arsenic, Dissolved (Filtered)	50	<1				
Berium, Dissolved (Filtered)	7154	36				
Cadmium, Dissolved (Filtered)	51.1	1.1				
Copper, Dissolved (Filtered)	3800	<10	---	---	---	---
Chromium (VI), Dissolved (Filtered)			<60			<6
Lead, Dissolved (Filtered)	1.60E + 1	<1	---	---	<2.0	---
Mercury, Dissolved (Filtered)	6.1	<0.2				
Nickel, Dissolved (Filtered)	2040	<10	---	---	<20	---
Selenium, Dissolved (Filtered)	51	<2				
Zinc, Dissolved (Filtered)	30660	<20	---	---	---	---
Chromium, Total			ND	11		ND
Lead, Total		---	1.6	<2	---	1.3
Nickel, Total			5.8	<20		ND
Sum of Concentrations	38.20	7.40	172.00	90.00	1.30	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Det.

For RCL INORG

Criteria Comparison 1996 VRP Tier-II Non-Residential

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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CONSTITUENT (Units in ug/l)	SITE	9-33	9-33	9-33	D7	D7
	SAMPLE ID	1996 VRP	9-33			
	DATE	Tier II	03/19/97	09/26/97	09/26/97	09/04/96
RESULT TYPE	Non-Residential	Primary	Primary	Duplicate 1	Primary	Primary
Cyanide	2044	< 5	< 5	< 5	ND	< 5
Arsenic, Dissolved (Filtered)	60	---	---	---	---	---
Barium, Dissolved (Filtered)	7154	---	---	---	---	---
Cadmium, Dissolved (Filtered)	51.1	---	---	---	---	---
Copper, Dissolved (Filtered)	3800	---	---	---	---	---
Chromium (T), Dissolved (Filtered)		---	< 5	< 5	---	---
Lead, Dissolved (Filtered)	1.50E + 1	---	< 2.0	< 2.0	---	---
Mercury, Dissolved (Filtered)	6.1	---	---	---	---	---
Nickel, Dissolved (Filtered)	2040	---	< 20	< 20	---	---
Selenium, Dissolved (Filtered)	611	---	---	---	---	---
Zinc, Dissolved (Filtered)	30660	---	---	---	---	---
Chromium, Total		< 5	---	---	ND	< 5
Lead, Total		< 2	---	---	0.6	< 2
Nickel, Total		< 20	---	---	ND	< 20
Sum of Concentrations	0.00	0.00	0.00	0.60	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**ND = Not Detected**

For RCL INORG

## Criteria Comparison 1996 VRP Tier II Non-Residential

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in ug/l)	SITE	D7	MW-1	MW-1	MW-1	MW-2
	SAMPLE ID	1996 VRP				
	DATE	Tier II	09/24/97	12/20/96	03/16/97	09/26/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	< 5	ND	< 5	< 5	ND
Arsenic, Dissolved (Filtered)	50	---	< 1	---	---	< 1
Barium, Dissolved (Filtered)	7154	---	40	---	---	160
Cadmium, Dissolved (Filtered)	51.1	---	< 0.2	---	---	< 0.2
Copper, Dissolved (Filtered)	3800	---	< 10	---	---	< 10
Chromium (VI), Dissolved (Filtered)		---	< 5	< 50	---	< 50
Lead, Dissolved (Filtered)	1.50E+1	< 2.0	< 1 J	---	< 2.0	< 1
Mercury, Dissolved (Filtered)	6.1	---	< 0.2	---	---	< 0.2
Nickel, Dissolved (Filtered)	2040	< 20	< 10	---	< 20	< 10
Selenium, Dissolved (Filtered)	51.1	---	< 2	---	---	< 2
Zinc, Dissolved (Filtered)	30660	---	84	---	---	< 20
Chromium, Total		---	---	30 J	---	---
Lead, Total		---	---	19 J	---	---
Nickel, Total		---	---	140	---	---
Sum of Concentrations		0.00	104.00	189.00	0.00	150.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed

ND = Not Detected

For RCL IN WORKS

Plasma Comparison VRP Non-Residential

**Analytical Summary - Inorganics in Groundwater  
Area 1 - On-site Groundwater VOCs and Naphtha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	MW-2	MW-2	MW-3	MW-3	MW-3
	SAMPLE ID	1996 VRP	MW-2		MW-3	MW-3
DATE	Tier II	03/18/97	09/26/97	12/20/96	03/18/97	03/18/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Duplicate 1
Cyanide	2044	<5	<5	ND	<5	<5
Arsenic, Dissolved (Filtered)	50			<1		
Barium, Dissolved (Filtered)	7154	---	---	100	---	---
Cadmium, Dissolved (Filtered)	51.1	---	---	<0.2	---	---
Copper, Dissolved (Filtered)	3800	---	---	<10	---	---
Chromium (VI), Dissolved (Filtered)			<6	<60	---	---
Lead, Dissolved (Filtered)	1.50E + 1	---	<2.0	<1	---	---
Mercury, Dissolved (Filtered)	5.1			<0.2	---	---
Nickel, Dissolved (Filtered)	2040	---	<20	<10	---	---
Selenium, Dissolved (Filtered)	51.1			<2	---	---
Zinc, Dissolved (Filtered)	30660	---	---	<20	---	---
Chromium, Total		<6			9.8	20
Lead, Total	12	---	---	3.6	19	
Nickel, Total		<20			<20	<20
Sum of Concentrations	12.00	0.00	100.00	13.40	39.00	

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

**ND = Not Detected**

For RCL INORG

### **Criteria Comparison 1996 VRP Tier II Non-Residential**

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
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CONSTITUENT (Units in ug/l)	SITE	1996 VRP	MW-3	MW-4	MW-4	MW-4	MW-6
	SAMPLE ID		Tier II	09/26/97	12/19/96	03/18/97	09/26/97
	DATE		Non-Residential	Primary	Primary	Primary	Primary
Cyanide	2044		<5	6	<5	<5	9
Arsenic, Dissolved (Filtered)	50		---	1.4	---	---	1.6
Barium, Dissolved (Filtered)	7154		---	170	---	---	100
Cadmium, Dissolved (Filtered)	5.1		---	0.2	---	---	<0.2
Copper, Dissolved (Filtered)	3800		---	<10	---	---	<10
Chromium (VI), Dissolved (Filtered)			<5	50	---	---	<50
Lead, Dissolved (Filtered)	1.50E+1		<2.0	<1	---	<2.0	<1
Mercury, Dissolved (Filtered)	6.1		---	<0.2	---	---	<0.2
Nickel, Dissolved (Filtered)	2040		<20	<10	---	<20	<10
Selenium, Dissolved (Filtered)	511		---	<2	---	---	<2
Zinc, Dissolved (Filtered)	30660		---	<20	---	---	<20
Chromium, Total			---	---	2770	---	---
Lead, Total			---	---	707	---	---
Nickel, Total			---	---	620	---	---
Sum of Concentrations	0.00		177.40	4097.00	0.00	110.60	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

RCL WORDS

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	MW-5 01QD0522	MW-5 MW-5	MW-5 09/26/97	MW-6 12/19/96	MW-7 12/19/96
DATE	Tier II	12/20/96	03/18/97	09/26/97	12/19/96	12/19/96
RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Cyanide	2044	---	< 5	< 5	ND	ND
Arsenic, Dissolved (Filtered)	50	1.5	---	---	12	< 1
Barium, Dissolved (Filtered)	7154	99	---	---	160	56
Cadmium, Dissolved (Filtered)	51.1	< 0.2	---	---	< 0.2	< 0.2
Copper, Dissolved (Filtered)	3800	< 10	---	---	< 10	< 10
Chromium (VI), Dissolved (Filtered)	50	---	---	< 5	< 50	< 50
Lead, Dissolved (Filtered)	1.60E + 1	< 1	---	< 2.0	12	< 1
Mercury, Dissolved (Filtered)	6.1	< 0.2	---	---	< 0.2	< 0.2
Nickel, Dissolved (Filtered)	2040	< 10	---	< 20	< 10	< 10
Selenium, Dissolved (Filtered)	51.1	< 2	---	---	< 2	< 2
Zinc, Dissolved (Filtered)	30660	< 20	---	---	< 20	< 20
Chromium, Total			290	---	---	---
Lead, Total		152	---	---	---	---
Nickel, Total		92	---	---	---	---
Sum of Concentrations	100.50	534.00	0.00	184.00	56.00	
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed						
ND = Not Detected						
For RCL INORG						
Criteria Comparison 1996 VRP Tier II Non-Residential						

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
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CONSTITUENT (Units in ug/l)	SITE	MW-7	MW-7	MW-8	MW-8	MW-9
	SAMPLE ID	1996 VRP	MW-7			MW-8
	DATE	Tier II	03/18/97	09/25/97	12/19/96	03/18/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Cyanide	2044	< 6	< 6	6	6	ND
Arsenic, Dissolved (Filtered)	50			20		< 1
Barium, Dissolved (Filtered)	7154			150	---	120
Cadmium, Dissolved (Filtered)	51.1	---	---	< 0.2	---	< 0.2
Copper, Dissolved (Filtered)	3800	---	---	10	---	< 10
Chromium (VI), Dissolved (Filtered)		---	< 6	< 60	---	< 60
Lead, Dissolved (Filtered)	1.60E +1	---	< 2.0	1.1	---	< 1
Mercury, Dissolved (Filtered)	6.1	---	---	< 0.2	---	< 0.2
Nickel, Dissolved (Filtered)	2040	---	< 20	190	---	< 10
Selenium, Dissolved (Filtered)	51.1			< 2	---	< 2
Zinc, Dissolved (Filtered)	30660	---	---	< 20	---	< 20
Chromium, Total		75	---	---	< 5	---
Lead, Total		85	---	---	12	---
Nickel, Total		110	---	---	150	---
Sum of Concentrations		270.00	0.00	376.10	168.00	120.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

For RCL INDRS

Criteria Comparison 100% VRP Tier II Non-Residential

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**

**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

**ND = Not Detected**

For RCL INORG

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT	SITE	S14	S14	S16	S16	S16
	SAMPLE ID	1996 VRP	S14		S15	
	DATE	Tier II	03/19/97	09/24/97	09/04/96	03/21/97
	RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary
Cyanide	2044	<5	<5	ND	<5	<5
Arsenic, Dissolved (Filtered)	50	---	---	---	---	---
Barium, Dissolved (Filtered)	7154	---	---	---	---	---
Cadmium, Dissolved (Filtered)	61.1	---	---	---	---	---
Copper, Dissolved (Filtered)	3800	---	---	---	---	---
Chromium (T), Dissolved (Filtered)			<5			<5
Lead, Dissolved (Filtered)	1.50E+1		<2.0			<2.0
Mercury, Dissolved (Filtered)	61	---	---	---	---	---
Nickel, Dissolved (Filtered)	2040	---	<20	---	---	<20
Selenium, Dissolved (Filtered)	511	---	---	---	---	---
Zinc, Dissolved (Filtered)	30660	---	---	---	---	---
Chromium, Total		<5	---	ND	44	---
Lead, Total		<2	---	ND	2.7	---
Nickel, Total		<20	---	ND	<20	---
Sum of Concentrations	0.00	0.00	0.00	46.70	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

RCL/NORG

Maria C. Cason VRP II Non-Residential

Analytical Summary - Inorganics in Groundwater  
 Area 1 - On-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	S15 1996 VRP	S16 MW-101	S16 S16	S16 03/20/97	S16 09/24/97	S17 09/04/96
	DATE	Tier II	09/24/97	09/04/96	03/20/97	09/24/97	09/04/96
	RESULT TYPE	Non-Residential	Duplicate 1	Primary	Primary	Primary	Primary
Cyanide		2044	<5	ND	<5	<5	ND
Arsenic, Dissolved (Filtered)		50					
Barium, Dissolved (Filtered)		7154	---	---	---	---	---
Cadmium, Dissolved (Filtered)		51.1					
Copper, Dissolved (Filtered)		3800	---	---	---	---	---
Chromium (VI) Dissolved (Filtered)			<5			<5	
Lead, Dissolved (Filtered)		1.50E +1	<2.0	---	---	<2.0	---
Mercury, Dissolved (Filtered)		8.11					
Nickel, Dissolved (Filtered)		2040	<20	---	---	<20	---
Selenium, Dissolved (Filtered)		51.1					
Zinc, Dissolved (Filtered)		30660	---	---	---	---	---
Chromium, Total			ND	<5	---	4.1	
Lead, Total			1.5	<2	---	0.6	
Nickel, Total			6.9	<20	---	ND	
Sum of Concentrations		0.00	8.40	0.00	0.00	4.70	
<hr/>							
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed							
ND = Not Detected							
For RCL INORG							
Criteria Comparison 1996 VRP Tier II Non-Residential							

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - On-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 10/25/99

CONSTITUENT (Units in ug/l)	SITE	S17	S26	S26	S26	S26
	SAMPLE ID	1996 VRP	S17	S26	S26	S26
	DATE	Tier II	03/20/97	09/05/96	03/20/97	09/23/97
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	<5	ND	<5	<5	<5
Arsenic, Dissolved (Filtered)	50					<1
Barium, Dissolved (Filtered)	7154	---	---	---	---	260
Cadmium, Dissolved (Filtered)	61.1					<0.2
Copper, Dissolved (Filtered)	3800	---	---	---	---	<10
Chromium (VI), Dissolved (Filtered)					<5	50
Lead, Dissolved (Filtered)	1.50E + 1	---	---	---	<2.0	<1
Mercury, Dissolved (Filtered)	6.1					<0.2
Nickel, Dissolved (Filtered)	2040				<20	<10
Selenium, Dissolved (Filtered)	5.11					<2
Zinc, Dissolved (Filtered)	30660	---	---	---	---	<20
Chromium, Total		<5	4.6	<5		
Lead, Total		<2	9.7	41	---	---
Nickel, Total		<20	8.1	<20	---	---
Sum of Concentrations	0.00	22.30	41.00	0.00	260.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Determined

For RCL HOMES

**Analytical Summary – Inorganics in Groundwater  
Area 1 – On-site Groundwater VOCs and Naphtha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Date: 10/25/99

CONSTITUENT (Units in ug/l)	SITE	S4A	S4A	S4A	S5	S6
	SAMPLE ID	1996 VRP	S4A	S4A	S5	S6
	DATE	Tier II	09/05/96	03/21/97	09/23/97	12/20/96
RESULT TYPE	Non-Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	2044	---	<5	<5	ND	ND
Arsenic, Dissolved (Filtered)	50	---	---	---	<1	<1
Barium, Dissolved (Filtered)	7154	---	---	---	120	33
Cadmium, Dissolved (Filtered)	51.1	---	---	---	<0.2	<0.2
Copper, Dissolved (Filtered)	3800	---	---	---	<10	<10
Chromium (VI), Dissolved (Filtered)	1.50E+1	---	---	<5	<50	<50
Lead, Dissolved (Filtered)	6.1	---	<2.0	<1	<1	<1
Mercury, Dissolved (Filtered)	6.1	---	---	---	<0.2	<0.2
Nickel, Dissolved (Filtered)	2040	---	---	<20	<10	<10
Selenium, Dissolved (Filtered)	511	---	---	---	<2	<2
Zinc, Dissolved (Filtered)	30660	---	---	---	<20	<20
Chromium, Total	43	16	---	---	---	---
Lead, Total	53	26	---	---	---	---
Nickel, Total	81	20	---	---	---	---
Sum of Concentrations	177.00	42.00	0.00	120.00	33.00	---

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 10/25/99

CONSTITUENT (Units: ug/l)	SITE	5D	5D	5D	5D	5D	
	SAMPLE ID	1996 VRP					
	DATE	Tier.II	09/05/96	12/11/96	03/20/97	06/04/97	09/24/97
	RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		2	<2	<2	<10	<2	<10
1,1-Dichloroethane		640	<6	<6	<5	<5	<6.0
1,2-Dichloroethane		5	<5	<5	<5	<5	<6.0
cis-1,2-Dichloroethene		70	<5	<5	<6	<5	<6.0
trans-1,2-Dichloroethene		608	<5	<5	<5	<5	<6.0
Trichloroethene		5	<6	<5	<6	<6	<6.0
Chloroethane		7.82E+3	<10	<10	<10	<10	<10
Sum of Concentrations			3.00	3.00	0.00	0.00	0.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

For RCL VOC

Oklahoma Commission 100% VRP Trial Results

**Analytical Summary - VOCs in Groundwater  
Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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South Bend, Indiana							
CONSTITUENT (Units in ug/l)	SITE	5D	D4	D4	D4	D4	D4
	SAMPLE ID	1996 VRP					
	DATE	Tier II	12/10/97	09/04/96	12/10/96	03/21/97	03/21/97
	RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Duplicate 1
Vinyl chloride	2	<10	[17]	[11]	[18]	[16]	
1,1-Dichloroethane	640	<5.0	<5	<5	<5	<5	<5
1,2-Dichloroethane	5	<5.0	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	70	<5.0	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	608	<5.0	<5	<5	<5	<5	<5
Trichloroethene	5	<5.0	<5	<5	<5	<5	<5
Chlorethane	7.92E+3	<10	<10	<10	<10	<10	<10
Sum of Concentrations		0.00	17.00	11.00	18.00	16.00	

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

[1] = Greater than Action Level

For RCL VOC1

### **Criteria Comparison 1996 VRP Tier II Residential**

**Analytical Summary - VOCs in Groundwater  
Area 1 - Off-site Groundwater VOCs and Naptha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	D4	D4	D4	D4	\$20	
	SAMPLE ID	1996 VRP					
	DATE	Tier II	06/04/97	09/25/97	12/11/97	12/11/97	09/05/96
	RESULT TYPE	Residential	Primary	Primary	Primary	Duplicate 1	Primary
Vinyl chloride	2	<2	[24]	[28]	[29]	<2	
1,1-Dichloroethane	640	<5	<5.0 E	<5.0	<5.0	<5	
1,2-Dichloroethane	5	<5	<5.0 E	<5.0	<5.0	<5	
cis-1,2-Dichloroethene	70	<5	<5.0 E	<5.0	<5.0	<5	
trans-1,2-Dichloroethene	608	<5	<5.0 E	<5.0	<5.0	<5	
Trichloroethene	5	<5	<5.0 E	<5.0	<5.0	<5	
Chloroethane	7.92E+3	25	<10 E	<10	<10	<10	
Sum of Concentrations		26.00	24.00	28.00	29.00	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

|| = Greater than Action Level

For RCL VOC

Analytical Summary - VOCs in Groundwater  
 Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT	SITE	S20	S20	S20	S20	S21	
	SAMPLE ID	1996 VRP	520	03/20/97	06/04/97	09/23/97	
	DATE	Tier II	Primary	Primary	Primary	Primary	
RESULT TYPE	Residential						
Vinyl chloride		2	< 10	< 2	< 10	< 10	< 2
1,1-Dichloroethane		640	< 5	< 5	< 5.0	< 5.0	< 5
1,2-Dichloroethane		5	< 5	< 5	< 5.0	< 5.0	< 5
cis-1,2-Dichloroethene		70	< 5	< 5	< 5.0	< 5.0	17
trans-1,2-Dichloroethene		608	< 5	< 5	< 5.0	< 5.0	25
Trichloroethene		5	< 5	< 5	< 5.0	< 5.0	[21]
Chloroethane		7.92E+3	< 10	< 10	< 10	< 10	< 10
Sum of Concentrations			0.00	0.00	0.00	0.00	63.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

[J] = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Residential

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**

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CONSTITUENT (Units in ug/l)	SITE	621	621	621	621	621
	SAMPLE ID	1996 VRP	S21	03/20/97	06/04/97	09/26/97
	DATE	Tier II	12/11/96			12/10/97
RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	2	<2	<10	<2	<10	<10
1,1-Dichloroethane	640	<6	<6	<6	<6.0	<6.0
1,2-Dichloroethane	5	<5	<5	<5	<5.0	<5.0
cis-1,2-Dichloroethene	70	15	22	36	26	23
trans-1,2-Dichloroethene	608	9.3	16	29	20	18
Trichloroethene	5	[19]	[28]	[31]	[42]	[46]
Chloroethane	7.92E + 3	<10	<10	<10	<10	<10
Sum of Concentrations		43.30	66.00	96.00	87.00	87.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

1) = Greater than Junction Level

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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Date: 10/25/99

South Bend, Indiana							
CONSTITUENT (Units in ug/l)	SITE	S22	S22	S22	S22	S22	S22
	SAMPLE ID	1996 VRP		S22		S22	
	DATE	Tier II	09/04/96	12/11/96	03/22/97	06/04/97	09/23/97
RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	2	<2	<2	<10	<2	<2	<10
1,1-Dichloroethane	640	<5	<5	<5	<5	<5	<5.0
1,2-Dichloroethane	5	<5	<6	<5	<6	<6	<6.0
cis-1,2-Dichloroethene	70	67	55	46	66	64	
trans-1,2-Dichloroethene	608	77	70	69	91	97	
Trichloroethene	5	<5	<6	<6	<6	<6	<5.0
Chloroethane	7.92E+3	<10	<10	<10	<10	<10	<10
Sum of Concentrations		134.00	125.00	115.00	157.00	161.00	

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Bend, Indiana							
CONSTITUENT <small>(Units in ug/l)</small>	SITE	S22	S23	S23	S23	S23	S23
	SAMPLE ID	1996 VRP			623		
	DATE	Tier II	12/10/97	09/05/96	03/22/97	06/04/97	09/23/97
RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	2	<10	<2	<10	<2	<10	<10
1,1-Dichloroethane	640	<6.0	<6	<6	<5	<5	<5.0
1,2-Dichloroethane	5	<5.0	<5	<5	<5	<5	<5.0
cis-1,2-Dichloroethene	70	63	<6	<6	<5	<5	<5.0
trans-1,2-Dichloroethene	608	92	<5	<5	<5	<5	<5.0
Trichloroethene	5	<5.0	<5	<5	<5	<5	<5.0
Chloroethane	7.92E+3	<10	<10	<10	<10	<10	<10
Sum of Concentrations		165.00	0.00	0.00	0.00	0.00	0.00

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

For RCL var

Criteria Comparison 1990 VRP-Tier II Residential

**Analytical Summary - VOCs in Groundwater  
Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	523		S24		S24		S24	
	SAMPLE ID	1996 VRP							
	DATE	Tier II	12/10/97	09/04/98	Primary	Primary	Primary	Primary	Primary
RESULT TYPE	Residential								
Vinyl chloride		2	<10	<2	<2	<2	<10	<2	<2
1,1-Dichloroethane		540	<5.0	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane		5	<5.0	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene		70	<5.0	52	52	44	(100)		
trans-1,2-Dichloroethene		608	<5.0	84	77	85	170		
Trichloroethene		5	[5.1]	[81]	[7.3]	[5]	[8.0]		
Chloroethane		7.92E + 3	<10	<10	<10	<10	<10		
Sum of Concentrations			5.10	144.00	136.30	129.00	279.00		

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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South Beach, Ireland							
CONSTITUENT (Units in ug/l)	SITE	S24	S 24	S25	S26	S25	S26
	SAMPLE ID	1996 VRP					
	DATE	Tier II	09/23/97	12/09/97	09/05/96	12/11/96	03/20/97
	RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	2	<10	<10	<2	<2	<10	<10
1,1-Dichloroethane	640	<5.0	<5.0	<5	<5	<5	<5
1,2-Dichloroethane	5	<5.0	<5.0	<5	<5	<5	<5
cis-1,2-Dichloroethene	70	19.1	19.1	<5	<5	<5	<5
trans-1,2-Dichloroethene	608	160	180	<5	<5	<5	<5
Trichloroethylene	5	19.11	19.31	<5	<5	<5	<5
Chloroethane	7.92E+3	<10	<10	<10	<10	<10	<10
Sum of Concentrations		260.10	288.30	2.30	3.20	0.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

II = Greater than Action Level

For RCL VOTER  
Caucus Comparison, 1995 VVR-Town Residential

Analytical Summary - VOCs in Groundwater  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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Date: 10/25/99

CONSTITUENT (Units in ug/l)	SITE	\$25	\$25	\$25	\$27	\$27
	SAMPLE ID	1996 VRP				
	DATE	Tier II	06/04/97	09/23/97	12/10/97	09/05/96
	RESULT TYPE	Residential	Primary	Primary	Primary	Primary
Vinyl chloride		2	<2	<10	<10	<2
1,1-Dichloroethane		640	<5	<5.0	<5.0	<5
1,2-Dichloroethane		5	<5	<5.0	<5.0	<5
cis-1,2-Dichloroethene		70	<5	<5.0	<5.0	21
trans-1,2-Dichloroethene		608	<5	<5.0	<5.0	15
Trichloroethene		5	<5	<5.0	<5.0	[27]
Chloroethane		7.92E+3	<10	<10	<10	<10
Sum of Concentrations		0.00	0.00	0.00	62.00	67.00

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- = Not analyzed

[ ] = Greater than Action Level

For RCL VOC1

Criteria Comparison 1996 VRP Tier II Residential

**Analytical Summary - VOCs in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	S27	S27	S27	S27	S9	
	SAMPLE ID	1996 VRP	S27				
	DATE	Tier II	03/20/97	06/05/97	09/23/97	12/09/97	09/04/96
	RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride	2	< 10	< 2	< 10	< 10	< 2	
1,1-Dichloroethane	640	< 5	< 5	17	26	< 5	
1,2-Dichloroethane	5	< 5	< 5	< 5.0	< 5.0	[240]	
cis-1,2-Dichloroethene	70	21	26	31	30	24	
trans-1,2-Dichloroethene	608	11	16	18	16	< 5	
Trichloroethene	5	[23]	[25]	[36]	[36]	< 5	
Chloroethane	7.92E + 3	< 10	< 10	< 10	< 10	< 10	
Sum of Concentrations		55.00	66.00	102.00	108.00	264.00	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

[I = Greater than Action Level]

Analytical Summary - VOCs in Groundwater  
 Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE SAMPLE ID	59 1996 VRP	59	59	59	59	59
	DATE	Tier II	12/11/96	03/19/97	06/04/97	09/25/97	12/11/97
	RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Vinyl chloride		2	<2	<10	<2	<10	<10
1,1-Dichloroethane		640	<5	<5	<5	<5.0	<5.0
1,2-Dichloroethane		5	<5	[220]	[250]	[190]	[240]
cis-1,2-Dichloroethene		70	15	45	64	54	62
trans-1,2-Dichloroethene		608	9.3	6.8	<5	5.8	<5.0
Trichloroethene		6	[19]	<5	<5	<5.0	<5.0
Chloroethane		7.92E+3	<10	<10	<10	<10	<10
Sum of Concentrations			43.30	270.80	304.00	249.80	302.00
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
II = Greater than Action Level The following qualifier(s) exist: J, E							
For RCL VOC1		Criteria Comparison 1996 VRP Tier II Residential					

**Analytical Summary - Inorganics in Groundwater  
Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
Voluntary Site Investigation  
AlliedSignal Industrial Complex  
South Bend, Indiana**

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Values represent total concentrations unless noted < = Not detected at indicated reporting limit ... = Not analyzed

**ND = Not Determined**

For RCL WORKS

Analytical Summary - Inorganics in Groundwater  
 Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units in ug/l)	SITE	D4	D4	\$20	\$20	\$20
	SAMPLE ID	1996 VRP	D4			
	DATE	Tier II	03/21/97	09/25/97	09/06/96	03/20/97
	RESULT TYPE	Residential	Duplicate: 1	Primary	Primary	Primary
Cyanide		200	< 5	< 5	ND	< 5
Arsenic, Dissolved (Filtered)		50				
Barium, Dissolved (Filtered)		2000	---	---	---	---
Cadmium, Dissolved (Filtered)		5				
Copper, Dissolved (Filtered)		1300	---	---	---	---
Chromium (VI), Dissolved (Filtered)			< 5			< 5
Lead, Dissolved (Filtered)		1.5E + 1	---	< 2.0	---	< 2.0
Mercury, Dissolved (Filtered)		100				
Nickel, Dissolved (Filtered)		100	---	< 20	---	< 20
Selenium, Dissolved (Filtered)		50				
Zinc, Dissolved (Filtered)		9120	---	---	---	---
Chromium, Total		9.3	---	ND	< 5	
Lead, Total		< 2	---	ND	3.6	---
Nickel, Total		< 20	---	5.4	< 20	
Sum of Concentrations		9.30	0.00	5.40	3.60	0.00
Values represent total concentrations unless noted   < = Not detected at indicated reporting limit   --- = Not analyzed						
ND = Not Detected						
For RCL INORG						
Criteria Comparison 1996 VRP Tier II Residential						

Analytical Summary - Inorganics in Groundwater  
 Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT (Units: in ug/l)	SITE	621	621	621	622	622
	SAMPLE ID	1996 VRP	621	621	622	622
	DATE	Tier II	09/05/96	03/20/97	09/26/97	09/04/96
RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	200	ND	<5	<5	ND	<5
Arsenic, Dissolved (Filtered)	50					
Barium, Dissolved (Filtered)	2000	---	---	---	---	---
Cadmium, Dissolved (Filtered)	5					
Copper, Dissolved (Filtered)	1300	---	---	---	---	---
Chromium (T), Dissolved (Filtered)				<5		
Lead, Dissolved (Filtered)	1.5E + 1	---	---	<2.0	---	---
Mercury, Dissolved (Filtered)	100					
Nickel, Dissolved (Filtered)	100	---	---	<20	---	---
Selenium, Dissolved (Filtered)	50					
Zinc, Dissolved (Filtered)	9120	---	---	---	---	---
Chromium, Total		ND	5.6		ND	7.4
Lead, Total		ND	3	---	1.6	<2
Nickel, Total		ND	<20		ND	<20
Sum of Concentrations	0.00	8.60	0.00	1.60	7.40	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

F = RCL flagged

Criteria Comparison: VRP Tier II Residential

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units in ug/l)	SITE	S22	S23	S23	S23	S23	S24
	SAMPLE ID	1996 VRP					
	DATE	Tier II	09/23/97	09/05/96	03/22/97	09/23/97	09/04/96
RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary	Primary
Cyanide	200	<5	ND	<5	<5	ND	
Arsenic, Dissolved (Filtered)	50						
Barium, Dissolved (Filtered)	2000	--	--	--	--	--	
Cadmium, Dissolved (Filtered)	5						
Copper, Dissolved (Filtered)	1300	--	--	--	--	--	
Chromium (VI), Dissolved (Filtered)		<5	--	--	<5	--	
Lead, Dissolved (Filtered)	1.5E + 1	< 2.0	--	--	< 2.0	--	
Mercury, Dissolved (Filtered)	100	--	--	--	--	--	
Nickel, Dissolved (Filtered)	100	< 20	--	--	< 20	--	
Selenium, Dissolved (Filtered)	50		--	--	--	--	
Zinc, Dissolved (Filtered)	9120	--	--	--	--	--	
Chromium, Total			ND	<5		ND	
Lead, Total		--	ND	<2	--	0.6	
Nickel, Total			ND	<20	--	5.4	
<b>Sum of Concentrations</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.00</b>	
Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed							
ND = Not Detected							
For RCL INORG							
Criteria Comparison 1996 VRP Tier II Residential							

**Analytical Summary - Inorganics in Groundwater**  
**Area 1 - Off-site Groundwater VOCs and Naphtha Releases**  
**Voluntary Site Investigation**  
**AlliedSignal Industrial Complex**  
**South Bend, Indiana**

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CONSTITUENT (Units: $\mu\text{g/l}$ )	SITE	S24	S24	S25	S25	S25
	SAMPLE ID	1998 VRP	S24		S26	
	DATE	Tier II	03/21/97	09/23/97	09/05/96	03/20/97
RESULT TYPE	Residential	Primary	Primary	Primary	Primary	Primary
Cyanide	200	<5	<5	ND	<5	<5
Arsenic, Dissolved (Filtered)	50					
Barium, Dissolved (Filtered)	2000	---	---	---	---	---
Cadmium, Dissolved (Filtered)	5					
Copper, Dissolved (Filtered)	1300	---	---	---	---	---
Chromium (VI), Dissolved (Filtered)			<5			<5
Lead, Dissolved (Filtered)	1.5E + 1	---	<2.0	---	---	<2.0
Mercury, Dissolved (Filtered)	100					---
Nickel, Dissolved (Filtered)	100	---	<20	---	---	<20
Selenium, Dissolved (Filtered)	50					
Zinc, Dissolved (Filtered)	9120	---	---	---	---	
Chromium, Total		13	---	ND	7.3	
Lead, Total		13	---	0.9	30	---
Nickel, Total			<20	ND	<20	
<b>Sum of Concentrations</b>	<b>26.00</b>	<b>0.00</b>	<b>0.90</b>	<b>37.30</b>	<b>0.00</b>	

Values represent total concentrations unless noted < = Not detected at indicated reporting limit --- = Not analyzed

ND = Not Detected

For PCL INFORM

Calibration Comparison 1998 VRP Total Residential

Analytical Summary - Inorganics in Groundwater  
 Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
 AlliedSignal Industrial Complex  
 South Bend, Indiana

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CONSTITUENT	SITE	S27	S27	S27	S9	S9
	SAMPLE ID	1996 VRP	S27		S9	S9
	DATE	Tier II	09/05/96	03/20/97	09/23/97	09/04/96
	RESULT-TYPE	Residential	Primary	Primary	Primary	Primary
Cyanide		200	ND	7	<5	ND
Arsenic, Dissolved (Filtered)		50				
Barium, Dissolved (Filtered)		2000	---	---	---	---
Cadmium, Dissolved (Filtered)		5				
Copper, Dissolved (Filtered)		1300	---			
Chromium (VI) Dissolved (Filtered)					<5	
Lead, Dissolved (Filtered)		1.5E+1			<2.0	
Mercury, Dissolved (Filtered)		100	---	---	---	---
Nickel, Dissolved (Filtered)		100	---	---	<20	---
Selenium, Dissolved (Filtered)		50	---	---		
Zinc, Dissolved (Filtered)		9120	---	---	---	---
Chromium, Total		ND	19	19	7.2	<5
Lead, Total		5.4	52	---	ND	3
Nickel, Total		6.0	<20	6.9	6.9	<20
Sum of Concentrations		11.40	78.00	0.00	14.10	12.00
Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed						
ND = Not Detected						
For RCL INORG						
Criteria Comparison 1996 VRP Tier II Residential						

Analytical Summary - Inorganics in Groundwater  
 Area 1 - Off-site Groundwater VOCs and Naphtha Releases  
 Voluntary Site Investigation  
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CONSTITUENT (Units in ug/l)	SITE	S9
	SAMPLE ID	1998 VRP
	DATE	Tier II
	RESULT TYPE	Residential Primary
Cyanide	200	10
Arsenic, Dissolved (Filtered)	60	---
Barium, Dissolved (Filtered)	2000	---
Cadmium, Dissolved (Filtered)	5	---
Copper, Dissolved (Filtered)	1300	---
Chromium (VI), Dissolved (Filtered)		< 5
Lead, Dissolved (Filtered)	1.5E + 1	< 2.0
Mercury, Dissolved (Filtered)	100	---
Nickel, Dissolved (Filtered)	100	< 20
Selenium, Dissolved (Filtered)	60	---
Zinc, Dissolved (Filtered)	9120	---
Chromium, Total		---
Lead, Total		---
Nickel, Total		---
<b>Sum of Concentrations</b>		<b>10.00</b>

Values represent total concentrations unless noted    < = Not detected at indicated reporting limit    --- = Not analyzed

For RCL INORD

Criteria Comparison 1998 VRP Tier II Residential